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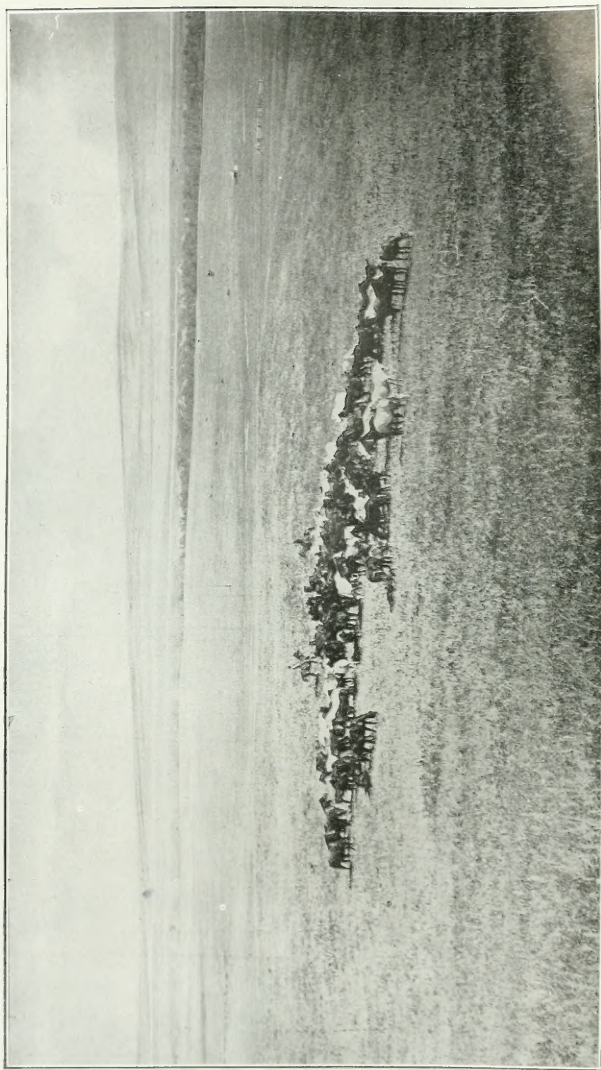
ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
OF THE
PROVINCE of ALBERTA
1916

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY



EDMONTON:
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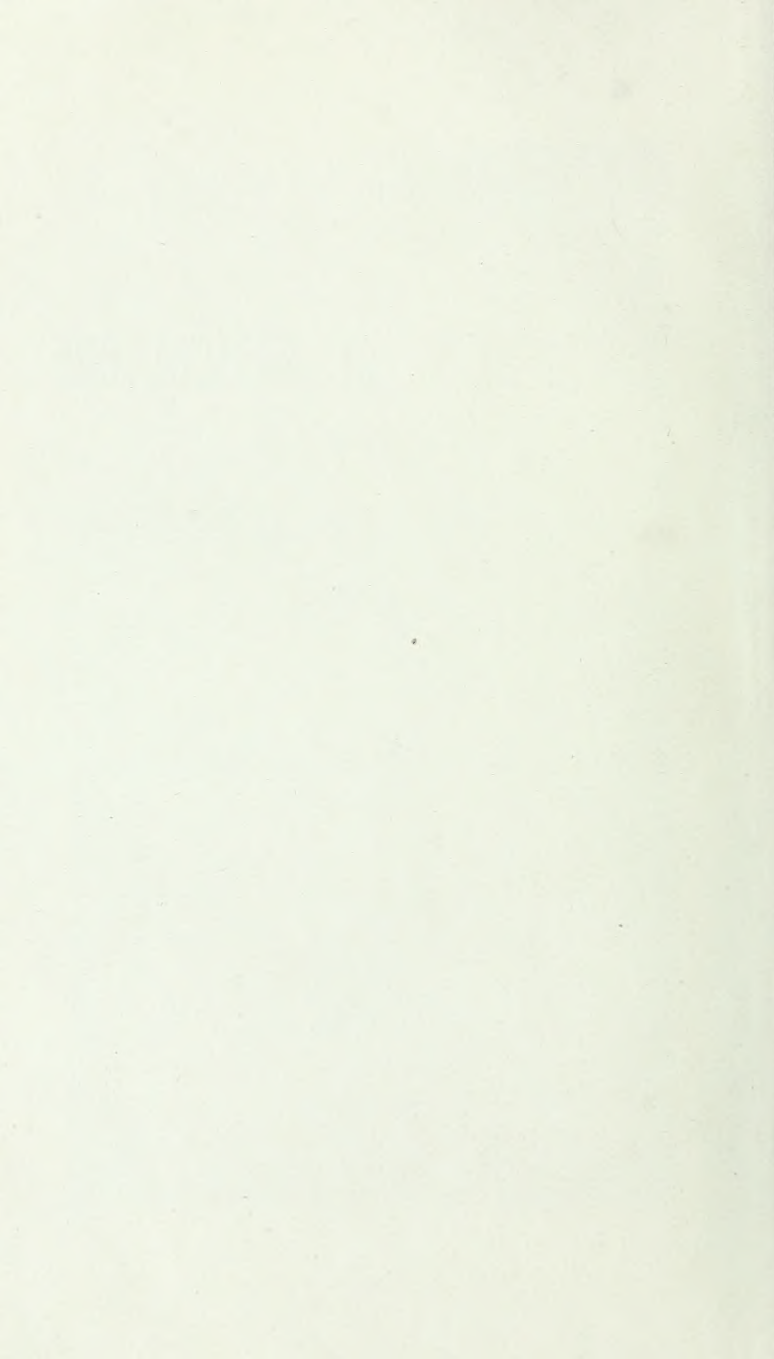
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DEPARTMENT OF AGRICULTURE,

EDMONTON, FEBRUARY 15, 1917.

To His Honour

ROBERT GEORGE BRETT,

Lieutenant Governor of the Province of Alberta.

SIR,—

I have the honor to submit herewith the Report of the Department of Agriculture for the year 1916.

I have the honor to be, Sir,

Your obedient servant,

DUNCAN MARSHALL,

Minister of Agriculture.

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DEPARTMENT OF AGRICULTURE

Heads of Branches.

S. G. Carlyle, Superintendent Demonstration Farms.

P. R. Talbot, Provincial Veterinarian.

W. F. Stevens, Live Stock Commissioner.

C. P. Marker, Dairy Commissioner.

A. Galbraith, Superintendent Fairs and Institutes.


Miss M. MacIsaac, Superintendent of Women's Institutes.

J. D. Smith, Superintendent of Seed and Weed Branch.

A. W. Foley, Poultry Superintendent.

Jas. Wilson, Brand Recorder.

Benj. Lawton, Chief Game and Fire Guardian.

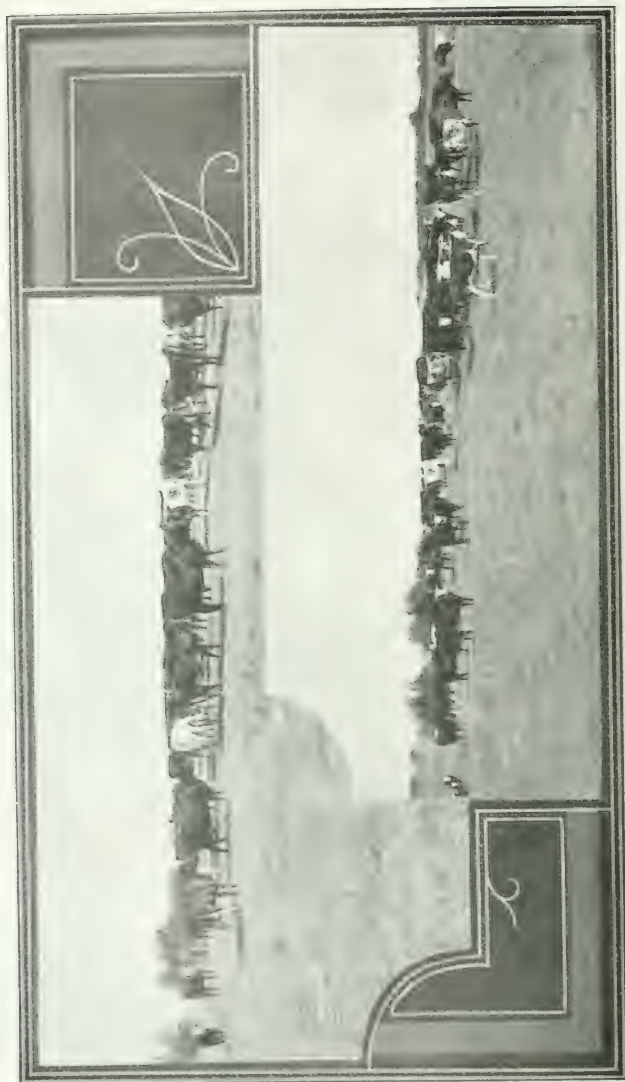
C. S. Hotchkiss, Chief Publicity Commissioner. 

R. B. Owens, Sanitary Engineer.

A. C. Rankin, M.D., Director of Provincial Laboratory.

Dr. T. J. Norman, Provincial Health Officer and Deputy Registrar-General.

James McCaig, Editor of Publications. 



ALBERTA RANGE CATTLE

REPORT OF THE DEPUTY MINISTER

HON. DUNCAN MARSHALL,
Minister of Agriculture,
Edmonton.

SIR.—I have the honour to submit herewith the tenth annual report of the Department of Agriculture. It includes a summary of agricultural conditions in the province as well as reports from the heads of the various administrative branches outlining their work for the year. Some of these officials have also written articles relating to their special field of work. It is planned to include in subsequent reports, articles from the heads of other branches of the Department.

Changes in Staff.

Following the resignation of Oliver Blue as Assistant Superintendent of the Seed and Weed Branch, John Clark was appointed to this office. Early in the year, A. Davidson, accountant for the Department, resigned to enlist for overseas.

Farm Crops.

The season of 1916 has been a rather peculiar one, but on the whole proved to be a very successful crop season for the farmers of the province. Over a considerable area, the early spring was quite dry, while later on the rainfall was heavy. Notwithstanding this, as the crop approached maturity, the outlook was very promising, and but for the frost which occurred about August 10th there is little doubt but that last year's crop would have exceeded the phenomenal yield of 1915. The whole southern portion of the province escaped the frost almost entirely. From this district we have reports of yields running as high as 70 bushels to the acre, and on large acreages 45 bushels was not an uncommon yield.

Table of yields in wheat, oats and barley—average for ten years:

<i>Year</i>	<i>Average Yield per Acre</i>	<i>Average Yield</i>
WHEAT.		
1906	23.07	
1907	18.81	
1908	18.25	
1909	18.97	
1910	12.85	
1911	20.75	20.16
1912	18.20	
1913	19.51	
1914	15.26	
1915	35.93	
1916	28.00	

<i>Year</i>	<i>Average Yield per Acre</i>	<i>Average Yield</i>
OATS.		
1906	39.12	
1907	30.11	
1908	36.93	
1909	35.76	
1910	24.68	
1911	41.21	36.99
1912	38.15	
1913	36.09	
1914	30.15	
1915	57.66	
1916	45.60	
BARLEY.		
1906	29.32	
1907	19.78	
1908	25.03	
1909	30.72	
1910	20.79	
1911	29.41	26.60
1912	27.94	
1913	25.92	
1914	23.01	
1915	34.11	
1916	30.00	

Throughout the central and northern portions of the province frost did considerable damage in many localities. It is significant that while some fields were badly frozen, others close by were not injured. Owing to this fact, there are few localities where grain for seed purposes will have to be shipped in from other points in the province. Alberta was particularly fortunate in that the rust which visited some of the other Western Provinces did little damage except in the extreme eastern portion and even here the disease struck the crops when they were sufficiently far advanced so that no great loss occurred. As soon as reports reached the Department of the appearance of this rust, officials were sent to examine the suspected fields in order that the Department might be kept in touch with the spread of the disease and to advise people respecting it. Records go to show that rust visited this province only once previously. It has been proved that the appearance of rust in one year does not necessarily mean that the trouble may again be looked for in the following season. Very special conditions are essential for the development of the spore, and unless these climatic conditions are furnished there is little danger from the appearance of the disease. As previously indicated, the total crop yield of the province will be exceedingly large, notwithstanding that there was some damage from rust and frost, and that the acreage was a little less than the year before. Prices for all kinds of grain have been very high, consequently the farmers of the province have realized as much, if not more, than they have ever realized for a previous season's crop.

The hay crop was abundant, but excessive rains during the haying season somewhat reduced the quantity put up and also lowered the quality.

Live Stock.

On account of the prices of grain, there was some falling off in the production of hogs, even though the market for pork was very high. Never in the history of the province have such prices been paid and those who were fortunate enough to have hogs for sale secured large profits. As the fall season approached, there was a strong demand for breeding sows, so that the coming season will doubtless see an increase in hog production.

Sheep products have shared in the stiffening of prices. Owing to the world scarcity of meat stock the price of mutton, which customarily runs below pork and beef, has been running up even with other meat prices for the past two years. Sheep values have been enhanced principally, however, by the demand for wool for military clothing and prospects are favorable for still higher prices next year. There has been an active demand for breeding ewes to form small farm flocks. The coyote pest has prevented many men from establishing small flocks of sheep on farms, but on account of the high price of mutton and wool a large number of men have fenced against coyotes and are determined to share in the profits of this very remunerative industry.

During the fall season there was a heavy movement of stockers throughout the province. This movement was materially assisted by the railways introducing a reduction in freight rates of 25% on all stockers shipped from certain central points and by the establishment of public stock yards accommodations. In the City of Edmonton, the Edmonton Stock Yards were established about midsummer and opened for business as a public market for live stock. These yards have been well patronized and will prove a very great help to the live stock business in the northern portion of the province.

On account of grain prices, there will be very few steers fed for the spring market but there is little doubt but that the price for finished spring beef will be exceedingly high.

Marketing of Farm Products.

During the season, the Department issued a bulletin on the production and handling of timothy seed. This was widely distributed and doubtless served to encourage a number of farmers to save the hay crop for timothy seed production. Mr. J. D. Smith, Superintendent of the Seed Branch, visited Eastern Canada during the summer and investigated the possibilities of marketing Alberta timothy seed at various points. He succeeded in interesting a number of eastern buyers in our seed. Already some forty cars have been shipped to Eastern Canada. The reports which the Department has received on Alberta seed from these seedsmen are most encouraging. They have invariably referred to the bold, bright, plump quality of the kernel as compared with seed which can be secured elsewhere. Although the prices this season have not been particularly high, yet those who produced seed on a large scale will be very well pleased with the returns which they have secured. There is no doubt but that timothy seed production will become an important branch of the farming business of this country.

When Mr. Smith was in the east he also visited several buyers of potatoes and was successful in bringing a number of eastern firms in touch with Alberta producers and dealers. Already some two thousand cars have been shipped to Eastern Canada at very remunerative prices. A movement also commenced to points in the United States, but owing to the strict American regulations regarding inspection for disease, the movement stopped in the middle of the season.

Dairy Products.

The quality of stability in farm business in the province through dairying is very decidedly shown in largely increased production, the improvement of the quality of the output and the large extension of desirable markets. Notwithstanding the fact that high prices have been prevalent for grain, the production of butter and cheese in the province has increased during the year. Phenomenal prices have been secured for creamery butter. Shipments were made to England by the Dairy Commissioners of the three Western Provinces. It is particularly gratifying to note that the contribution from Alberta commanded the highest price, and furthermore, that the whole shipment met with the approval of Old Country dealers. Most gratifying letters have been received from men who handled the butter. Shipments were also made to Eastern Canada markets where good prices were realized. The coast trade continues to improve, with the result that very little New Zealand butter is now being sold on coast city markets.

The Dairy Commissioner has been successful in influencing a number of creameries in the province to install pasteurizing equipment. This has resulted in materially improving the keeping qualities of our butter. Fuller references will be made to this in the Dairy Commissioner's report. The butter grading and marketing service has been continued throughout the year and has been appreciated by the creamery men of the province.

Farm Labor.

The Department opened offices at Lethbridge, Calgary and Edmonton for the purpose of distributing farm labor; and 10,897 farm hands were distributed from these offices. They included soldiers from Calgary, Lethbridge and Edmonton camps, as well as men from Eastern Canada, the United States, British Columbia and from the homestead country north of Edmonton. A smaller number than usual came from Eastern Canada owing to the fact that many of the men who otherwise would have been available had enlisted for overseas. On account of the heavy crop and slight scarcity of labor, wages were higher than they have been in any previous year.

Agricultural Schools.

The Schools of Agriculture have continued to have a large attendance of both boys and girls. In view of the fact that a great many boys from the farms have enlisted for overseas, it is particularly gratifying that the attendance should be as large as it is. The course put on at these schools

is of a practical nature. The work in English and mathematics gives the girl or boy the kind of training which she or he might have received at the public school. Owing to a variety of circumstances in the past, it has not always been possible for the boy or girl in the country to attend school regularly, with the result that their education in public school subjects is not all that might be desired. This part of the Agricultural School course is especially appreciated by those who would otherwise be obliged to go through life without the necessary education in these subjects. Aside from the actual training received in the class room, the fact of their associating with one another under the best supervision and in wholesome environment makes the course a highly desirable one for the country boy or girl.

Other Educational Work.

The usual educational work has been carried on throughout the year. Institute speakers have been supplied to various places upon request. Short Course Schools were held where instruction was given in household economy, live stock, agronomy, dairying and poultry. During the early part of the summer, the demonstration train was operated. The different railway companies assisted in this work by supplying the equipment and hauling the special train free of charge. The heads of the branches of the Department prepared exhibits of an educational nature for this train and accompanied it en route through the province, giving lectures and discussing personally with those who visited the train many of their problems. It is scarcely necessary to state that a very large number of people were reached by this means.

Demonstration Farms.

The Demonstration Farms have had a very successful year from the standpoint of crop production and in the increase and improvement of live stock. On the southern farms particularly, large yields of grain have been reported. In common with the farmers of the province, some of the Demonstration Farms have suffered from frost and hail.

District Agents.

During the early spring, a system of district agents was established: five men representing the Department were stationed at the following places: Vermilion, Stony Plain, Olds, Sedgewick and Claresholm. All of these men had been connected with the Agricultural Schools during the school term. Their work for the season consisted of carrying on boys' and girls' clubs. Garden and vegetable seeds, potatoes and eggs were distributed to school children within a radius of fifteen or eighteen miles around the point at which the agent was located. The children of ninety-five schools were interested in this work. The schools were visited and instruction given to the children respecting the methods of planting and cultivation, and regarding the handling of chickens. The homes of the children were visited twice during the summer by the agent for the purpose of giving instruction to the child where the work was actually being done. In the fall, school fairs were held where prizes were offered

for roots and vegetables, flowers and poultry, also prizes for colts and calves, fed and handled by the children. The work proved most satisfactory. Very encouraging remarks were made by the parents. It is felt that such a system will greatly assist in interesting children of rural districts in the business of agriculture, and it is hoped that this work may be extended in the future so that the agent may give assistance to farmers in the locality in connection with their agricultural society work, community centre work, marketing, and in various other ways be a useful man to the people of the District.

Women's Institutes.

Women's Institutes have made a very substantial progress during the year. A number of new districts have organized and very keen interest has been shown in the work from all parts. Appreciation of the efforts of the Department has been evident, especially with respect to the short courses and demonstrations which have been conducted. The interest manifested in the work and the demand for new organizations indicate the fact that the Women's Institute is filling a place in the life of the community.

All of which is respectfully submitted,

H. A. CRAIG,

Deputy Minister.



HORSES ON THE RANGE

REPORT OF DEMONSTRATION FARMS

SIR, I beg to submit the report of the Demonstration Farms.

Farm Crops.

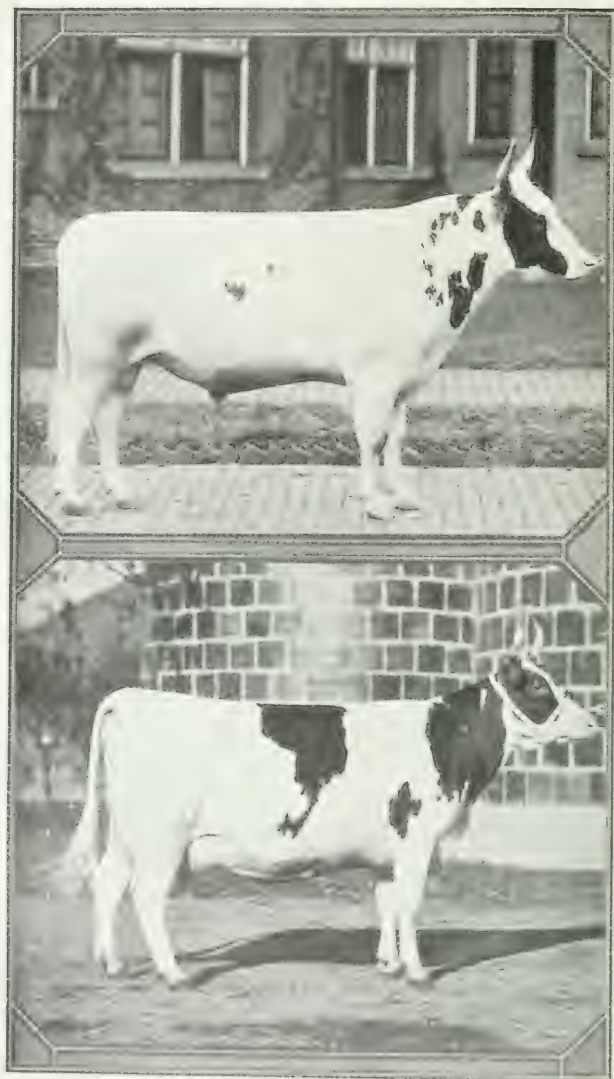
The crops grown on the demonstration farms for 1916, taken as a whole, were good. On the farms in the southern part of the province they were exceptionally so, but in the central part, owing to the excessive wet weather, some difficulties were experienced in harvesting. The root crop and small grains were very good, but the corn crop was scarcely up to the average, due to the cool moist season. Alfalfa on the farms in the northern parts of the province was completely killed, but on the Claresholm and Medicine Hat farms good crops were grown.

The farms all escaped hail this year except the Vermilion farm where the crop was badly damaged.

On the Medicine Hat farm another good crop was harvested this year. This farm produced 33 tons of alfalfa, 125 tons of corn ensilage, 8,459 bushels of oats, 50 tons of green feed, and 96 tons of roots. About half of the oat crop was sold, the rest being fed to the Jersey herd, the returns from this herd from milk alone being \$3,672.48.

On the Claresholm farm alfalfa has been grown more successfully than on any other farm. The difficulty in making good alfalfa hay from the first cutting has been due mostly to summer rains commencing about the time the alfalfa is ready to cut, so that it is almost impossible to cure hay of good quality. It was decided this year to put the first crop in the silo, running it through the ensilage blower. The result was highly satisfactory. From 4 acres, a crop of 28½ tons of green alfalfa was put in the silo, making first-class ensilage. One acre was kept for hay, producing 3 tons, 300 lbs. In September the whole five acres was cut the second time, yielding 11¼ tons of cured hay—15 acres of the land, intended for summerfallow, was planted to corn, which yielded 85 tons of ensilage and 15 tons of cured corn stalks. This land was well manured in winter and plowed down with the stubble, the corn was planted the 26th of May in hills and cultivated both ways. Besides the alfalfa and corn, this farm produced 1066 bushels of wheat, 5442 bushels of oats, 1280 bushels of barley, 42 tons of green-feed, and 100 tons of turnips.

The crop looked promising on the Olds farm early in the season, but the extreme wet weather in the fall considerably hindered operations and caused the crop to lodge badly. Tame hay was grown for the first time and an excellent crop was harvested, 27 acres yielded 74 tons. 3 acres of timothy was left for seed, from which was threshed 17½ bushels. Oats and barley were only a fair crop, with roots above the average. The silo was again filled with green oats cut in the milk stage, the ensilage being of good quality.



COWS OF THE FARM, CALIFORNIA

The crop on the Sedgewick farm was one of the best that has been grown there; peas averaged 26 bushels per acre, wheat 30 bushels, oats 61 bushels and tame hay 1 ton. The corn was badly frozen, but was put in the silo along with some green-feed, making fair ensilage.

At Athabasca a better crop was grown this year than in any previous year. A six acre field which had been sown to corn, roots and rape in 1915, was sown with registered Banner oats, supplied from Vermilion farm, and the yield was 100 bushels per acre; the barley averaged 30 bushels per acre. Turnips were a fair crop, but the corn was badly frozen early in the season.

On the Vermilion farm the corn, roots, and pea crops were completely ruined by hail, and the barley and oats damaged up to 75 per cent. The oat crop came on again and was nearly all cut for green-feed producing enough roughage for the stock. The tame hay crop was not as heavy as in previous years producing a little less than 1 ton per acre. The silo was filled with green oats and peas, which has given a splendid quality of ensilage.

A good average crop was produced on the Stony Plain farm. The alfalfa field was winter killed, but it was re-seeded again and a good stand was secured. An average crop of corn was grown, which was frozen early in the season. On this farm a silo was built this year, which was filled with corn and green oats cut in the milk stage.

Rape.

Rape has been successfully grown on the demonstration farms and is used principally for pasturing sheep and pigs. The seed is sown in a small field near the building early in May in drills about 30 inches apart. As soon as the rows can be seen a horse scuffler is used, the stock not being turned on until the rape is about 18 inches high.

Peas.

Good crops of peas have been grown on the Vermilion and Sedgewick farms, and an extremely heavy crop was promised on the Claresholm farm this year, but on account of the moist season they failed to mature and the unthreshed peas were fed to the pigs and sheep during the winter.

Total Production.

The total production from all the farms combined this year is as follows: Oats 29,369 bushels; barley 3,517 bushels; flax 384½ bushels; wheat 2,652 bushels; peas 99 bushels; tame hay 191 tons; roots 453 tons; ensilage 462 tons; green-feed 540 tons; alfalfa hay 50¼ tons; and timothy seed 25½ bushels.

Silos.

In order to supply succulent feed through the winter months a silo was built on the Sedgewick farm in the fall of 1913. Twelve acres of corn were planted and a fair crop grown which was put in the silo, the result being so satisfactory that the next year one was built on the Vermilion farm, where corn was also grown successfully. The results from these two silos were so encouraging that in 1915 three more silos were built

at Medicine Hat, Claresholm, and Olds, and instead of just corn being used, corn and alfalfa, corn and green oats, green oats and peas, alfalfa alone, and green oats alone, were used, and in every instance a good quality of ensilage was obtained. In 1916 a silo was built at Stony Plain, making six silos in all, or one on every farm except Athabasca.

The silos are all circular and built of 2x6 staves from 24 to 28 feet high. The first silos were built of native lumber, but the last silos put up were of British Columbia fir, tongued and grooved, which makes a first-class silo. All the silos are built on concrete foundations.



GAY LAD XL.

HEREFORD BULL RECENTLY PURCHASED BY FRANK COLLICUT

Live Stock.

The live stock on all the farms has done exceedingly well and more animals have been disposed of than in any previous year. While no outstanding records have been made by the dairy cattle, they have yielded a good average production. Below is the average number of pounds of milk per cow on each farm, and when it is considered that two and three year old heifers were counted as mature cows, the records are quite satisfactory:

Medicine Hat Farm...	22	Jersey Cows averaged	.....	7,670.0	lbs. milk.
Claresholm Farm	...	19	Ayrshire Cows averaged	.....	6,575.8 " "
Olds Farm	.....	24	Holstein Cows averaged	.....	8,047.2 " "
Stony Plain Farm	...	28	Holstein Cows averaged	.....	8,002.8 " "
Vermilion Farm	...	23	Holstein Cows averaged	.....	8,116.1 " "
Sedgewick Farm	...	17	Shorthorn Cows averaged	...	5,618.3 " "



JERSEYS ON UNIVERSITY FARM.
FEMALES BRED BY DEMONSTRATION FARMS



AN ALBERTA HOME

Sheep.

The sheep have done exceptionally well, the lamb crop being above the average. At Claresholm 8 ewes raised 16 lambs, and at Olds 17 ewes 31 lambs. It is the intention of the department to increase the number of sheep and the number of pure-bred kinds kept. At present Oxfords and Shropshires are the only pure-breeds.

Pigs.

The number of brood sows was cut down on account of the high cost of grain and most of the young pigs were sold for breeding purposes. The litters were up to the average and a good demand was reported for young stock.

Horses.

On account of the small acreage of the farms and the large number of other kinds of stock kept, the breeding of horses has not been gone into extensively, the object being to raise enough colts to supply the demand of the farms. Next year a number of older horses will be disposed of and replaced by colts raised on the farms. Ten colts were raised this year of the Clyde and Percheron breeds.

Cost System.

We have been endeavoring for some time to work out a system of the cost of production upon our farms, so that we may be able to determine with some accuracy the actual cost, under general farm conditions, of producing a bushel of grain, 100 pounds of milk, or any other given quantity of farm product. This problem has been rather difficult, for it is not an easy matter to keep an accurate account of the labor spent upon all the different kinds of productive farm work. We have now arrived, however, at a fairly efficient system of costs, and the information gained will be of great value, especially to the students in our Schools of Agriculture. A knowledge of the cost of production under different circumstances and conditions of farming is naturally of very great interest and importance to the farmer, and at an early date we shall be able to place in his hands some very useful information. It is our purpose on the Demonstration Farms to not only illustrate the best practices in cultivation, cropping, stock raising, etc., but likewise to contribute something to the working out of a simple service of accounting by which the business, as well as the art of farming, may be improved.

In view of its being the intention of the Department, at the close of the current year, to change the system of accounting to a cost system, there is given below a condensed balance sheet which includes the financial operations of the Demonstration Farms from the time they were inaugurated in 1911 until the end of 1916, including the whole period during which the first system of accounting was in use.

STATEMENTS OF STEER FEEDING, 1916-1917.

SEDGEWICK DEMONSTRATION FARM.

Weight of 18 steers weighed out April 10, 1917	26,400 lbs.	
Weight of 18 steers weighed in Nov. 14, 1916	22,125 lbs.	
Total gain in weight	4,275 lbs.	
Average weight of 18 steers weighed out	1,467 lbs.	
Average weight of 18 steers weighed in	1,229 lbs.	
Average increase in weight	238 lbs.	
By sale of 18 steers weighing 26,400 lbs. at \$9.50		\$2,508.00
To price of 18 steers weighing 22,125 lbs. at \$6.00		1,327.50
Gross profit		\$1,180.50
Gross profit per head		65.58
By sale of 18 steers weighing 26,400 lbs. at \$9.50		\$2,508.00
To price of 18 steers weighing 22,958 lbs. at \$6.00	\$1,327.50	
To interest paid on note	36.70	
To 508 bus. oats at 18 $\frac{1}{4}$ c.	92.80	
To 23 $\frac{1}{2}$ tons green feed at \$7.04	165.17	
To 9 $\frac{1}{4}$ tons hay at \$6.33	59.06	
To 20 $\frac{1}{4}$ tons turnips at \$4.65	94.09	
To 130 lbs. salt	1.73	
To 129 bus. barley at 42 $\frac{1}{2}$ c.	54.70	
To 3 $\frac{1}{4}$ tons frozen flax at \$3.92	12.74	
To 11 tons ensilage at \$4.82	53.05	
To 372 lbs. peas	6.54	
To labor	195.97	
To sundry expenses	21.69	\$2,122.04
Total net profit		\$ 385.96
Net profit per head		21.44

OLDS DEMONSTRATION FARM

Weight of 21 steers weighed out April 2, 1917	28,870 lbs.	
Weight of 21 steers weighed in Oct. 7, 1916	25,045 lbs.	
Total gain in weight	3,825 lbs.	
Average weight of 21 steers weighed out	1,375 lbs.	
Average weight of 21 steers weighed in	1,193 lbs.	
Average increase in weight	182 lbs.	
By sale of 21 steers weighing 28,870 lbs. at \$9.35		\$2,699.34
To price of 21 steers weighing 25,045 lbs. at \$6.25		1,565.31
Gross profit		\$1,134.03
Gross profit per head		54.00
By sale of 21 steers weighing 28,870 lbs. at \$9.35		\$2,699.34
To price of 21 steers weighing 25,045 lbs. at \$6.25	\$1,565.31	
To interest paid on note	35.60	
To insurance, $\frac{1}{2}$ of 1%	13.50	
To wild hay, 7 1-10 tons at \$5.74	40.81	
To salt, 378 lbs.	4.73	
To tame hay, 8 $\frac{1}{2}$ tons at \$7.54	71.61	
To green feed, 33 1-10 tons at \$7.05	235.22	
To turnips, 3 $\frac{1}{2}$ tons at \$3.15	11.02	
To oats, 431 bus. at 40c.	172.25	
To barley, 154 bus. at 33c.	50.60	
To labor	165.83	
To grinding expenses	17.74	\$2,402.34
Total net profit		\$ 297.00
Net profit per head		14.14

NOTE—All feed is charged at the cost of production.

DEMONSTRATION FARMS

FINANCIAL STATEMENT FROM 1911-1916 INCLUSIVE.

1911.

Operation Vote

Receipts		Credits	
	\$233,872.57		\$167,723.33
Purchase stock on hand			\$39,440.00
Young stock on hand			31,576.75
Total live stock on hand			\$71,016.75
Less stock purchased from capital			53,481.86
Increase in live stock			
Farm produce on hand			17,534.89
Amount chargeable to capital paid out of operation			37,988.02
Preparation for 1917 crop			3,794.37
Prepaid insurance			5,969.24
Balance loss			633.00
			219.72
	\$233,872.57		\$233,872.57

Respectfully submitted,

S. G. CARLILE,

Superintendent.

FORAGE CROPS IN ALBERTA.

BY S. G. CARLYLE.

In a system of mixed farming in Alberta where the rearing of good live stock is given a prominent place, the supplying of good pasture through the summer, and the raising of crops to supply the best roughage through the winter months, is one of the problems of the farmer.

To the man who is farming a quarter or half section in Central Alberta or a section in Southern Alberta where wild lands cannot be rented, the supply of good pasture is a serious problem. It will pay better to put all the land under cultivation rather than have any in its wild state, as native pastures will not stand close grazing in small enclosures. If the land is all broken a system of rotation can be carried on. However, it is well known that neither wild nor tame grass will supply pasture for a large number of stock owing to the light rainfall in the majority of seasons. This is especially true in Southern Alberta, where in some sections a stand of tame grass cannot be had, and in a great many others the growth is so light that it would take a large area to supply sufficient pasture for a few head of stock.

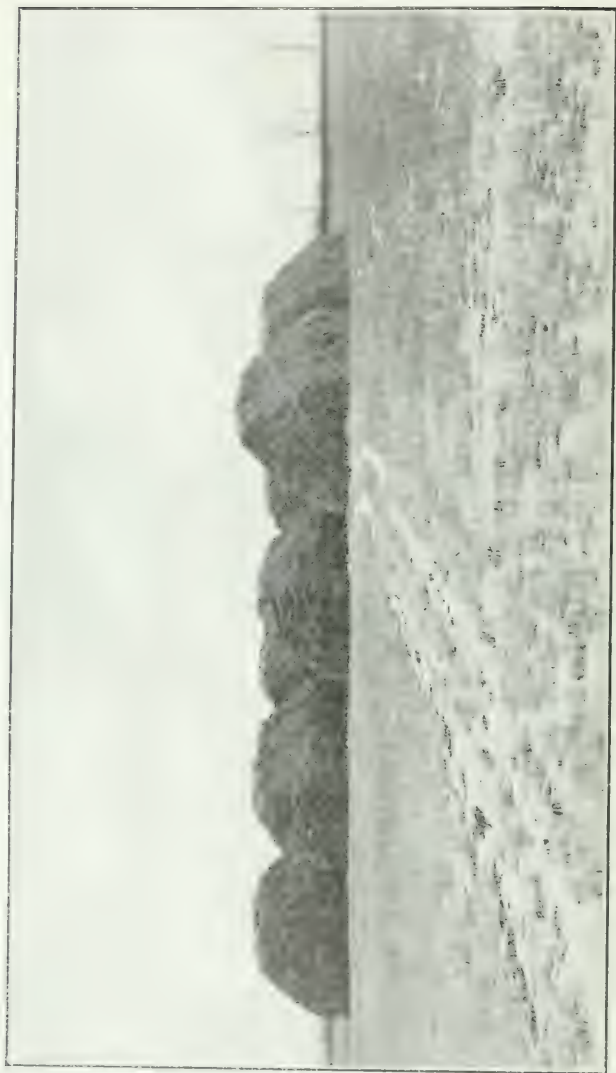
Cereals for Summer Feed.

On account of the difficulty of securing adequate supplies of summer feed from wild or tame grasses, the department has been trying out on the demonstration farms certain cereals to either take place of grass altogether, or in some sections to supplement the tame or wild grass pasture. Where tame or wild grass is fairly plentiful, one of the best crops to supplement it is fall rye sown in July or August at a rather heavy rate of seeding so as to get a thick stand. On some farms one and one-half bushels, two bushels, two and a half bushels, per acre have been tried, and the heavy seeding is favored. This comes on where grass pasture has begun to fail and furnishes good feed all fall, enabling the stock to come in to winter quarters in first-class condition. It also comes on earlier in the spring than any other crop and will furnish good pasture until about the middle of June, depending on the season, when, if it has not been eaten too closely, it can be left to ripen and a fair crop threshed. Otherwise it can be plowed down and sown to oats for green feed, or it can be worked the rest of the season as a summerfallow.

Where the farm is all under cultivation and seeding to grass is unprofitable, a mixture of fall wheat and oats in the proportion of one bushel fall wheat and two and a half bushels oats to the acre, sown early in the spring, has given good results. This comes on about the time the rye stem is getting hard and the flavor bitter, and it will last until September when the rye sown in July comes on again.

Rape.

Rape sown in May in drills twenty-eight or thirty inches apart furnishes excellent pasture for pigs and sheep, and is also relished by cattle, but the work of cultivating it makes it rather expensive for a large herd. The main reason for sowing in drills is that the crop may be cultivated which produces a more rapid growth, and leaves the soil in better condition for the crop following. Another advantage is that the stock



GRAIN STACKS ON AN ALBERTA FARM

will walk between the rows and thus avoid the wasteful tramping of the plants which takes place when the crop is sown broadcast. Stock should not be turned on rape too early, first because it will not stand much feeding; secondly, because it is very apt to cause bloat. The crop should be from twelve to eighteen inches high before any stock is turned upon it. After the stock has become accustomed to rape they may be kept in it continuously. It is an advantage to have the rape field adjacent to a rough sod pasture, as all kinds of stock relish a change from succulent to drier feeding.

Winter Feed.

Besides native or tame hay the most common feed in Alberta for stock during the winter months is green feed, which is chiefly oats cut before being matured. This makes excellent fodder, but it may be greatly improved by sowing with the oats a bushel of peas per acre. The peas and oats together make a better balanced ration, the peas being rich in protein. This makes excellent feed when the oats are cut in the dough stage, shocked, stacked and fed throughout the winter, and a still better feed when put in a silo as soon as cut and fed as ensilage.

Corn.

Corn is becoming more extensively grown in Alberta every year and in Southern and Eastern parts of the province, good crops of fodder can be grown in years of average sunshine and rainfall, but the results so far indicate that it is not advisable to grow it as a main crop on specially prepared soil but rather that its place in the rotation should be on land intended for summerfallow. In other words part of the fallow may be used for this crop. The same amount of labor, that is necessary to cultivate a good summerfallow, expended on the corn crop will in most years give a good crop of corn fodder, besides leaving the soil in nearly as good condition for the next crop as regards moisture and freedom from weeds.

It is advisable to plant in check rows forty-two inches apart for two reasons. First it allows better cultivation of the soil which is important for the crop that is to follow, and, secondly it provides for better circulation of air and more sunshine which warms the ground, causing more rapid growth, and, consequently, a better matured crop. A two-horse riding cultivator with spring teeth, or one with stiff teeth with diamond points, is the best implement for cultivating the growing crop, as a larger area can be gone over in a day than with the common one-horse scutfler.

Seed that has been ripened in the Northwest has proved hardier than that brought in from warmer sections, and certain varieties have shown a decided tendency to mature earlier than others. The Northwest Dent is perhaps the most satisfactory of any variety that has been tried so far, both as regards hardiness and early maturing qualities. New varieties are being tried every year and it is possible that a still better variety will be found. The crop can be put in large shocks in the field and fed as dry fodder throughout the winter, or, what is more satisfactory, it can be put in a silo and the crop not mature, the quality of ensilage can be greatly improved by mixing with the corn, green oats, peas and oats, or alfalfa. The ensilage from the mixed fodders will not be nearly so acid or sour as when the green immature corn is used alone.



CLASSES IN GRAIN AND STOCK JUDGING AT SCHOOLS OF AGRICULTURE

REPORT OF THE PROVINCIAL SCHOOLS OF AGRICULTURE

SIR.—The Provincial Schools of Agriculture are located at Claresholm, Olds and Vermilion. These schools have three main functions: First, to give instruction to students enrolled in the school during the winter; second, to carry on extension work with farmers in the summer; and third, to conduct experiments in the science of agriculture. While the instructional function is more frequently identified as the work of the school, the other lines are also important, the experimental line being, in fact, the real basis on which the instruction both in the class room and in farmers' meetings, is built.

In respect to their instructional facilities the Alberta Schools of Agriculture possess several distinct virtues. No qualifications for entrance are required; anyone who can read and write the English language can take the course. This arrangement enables many young men and women who are unqualified for high school or college and too old for public school, to continue their education. These students have frequently such a general knowledge of farming and exhibit such diligence in their studies that they frequently excel others possessing higher scholastic training. The schools are co-educational and frequently brothers and sisters come to school at the same time. The classes, compared with classes in central agricultural colleges, are smaller and thus allow students to ask more questions from, and get in closer touch with, the instructors.

The enrolment at the schools has been good. The detailed reports of the Principals of the Schools show definitely the attendance in the various classes. It must be said that while high enrolment at a school may be due to a number of causes, a permanently good enrolment must be due largely to the calibre of the course. Particularly is this true in institutions where the great majority of the students are not attempting to qualify for salaried positions. The drawing card to these agricultural schools is satisfied graduate students; one word of appreciation from an ex-student does more to induce others to attend than an entire address or a dozen letters. It is not boasting to say that the graduates of the schools are themselves the best advertisements.

This year, the spring of 1917, was the first in which uniform examinations at three schools were set. Every fall, prior to the commencement of the term, a conference of instructors has been held to arrange the course of study. It was thought this spring that the course of study had been sufficiently standardized now to permit uniform examinations. This will enhance the value of the graduate's diploma and will ensure a certain standard for those students who desire entrance to the university.

The extension work of the school is conducted chiefly in the summer. Some addresses are given in the winter, but the full time the staffs of the schools is needed for instructing the students. Certain lines of extension such as short courses, better farming, special trains, school fairs and field crop competitions are co-ordinated with other divisions of the Department. Other lines, such as visiting farms, particularly the farms of students, testing seed grain, cow testing and the preparations of cultures, are conducted by the schools alone.

The experimental function of the schools' activities is gradually developing. It is indispensable, both to the instructor and to the school. An instructor who has made no experiments is unable to come before a class or address a farmers' meeting with the same enthusiasm and the same confidence as the instructor who has done the work himself. Nearly all data on farming have been collected at Eastern Canada and American agricultural colleges and some of this material is not applicable to Alberta. Farmers cannot afford to undertake experiments themselves; it is too expensive. In order to meet this need, the staffs of the various schools are enlarging the scope of their experimental work. They are also making use freely of the reports of the Dominion Experimental Farms, to whom sincere appreciation is expressed.

The detailed reports of the Principals of the three Schools of Agriculture follow:

CLARESHOLM SCHOOL OF AGRICULTURE

SIR.—I beg to submit the Report of the Provincial School of Agriculture, Claresholm:

On October 30th, 1916, the Provincial School of Agriculture commenced work with the following staff:

Mr. W. J. Stephen, B.A., B.S.A., Principal and Instructor in Field Husbandry.

Mr. H. W. Scott, B.S.A., Instructor in Animal Husbandry.

Mr. A. E. Qually, B.S.A., Instructor in Mechanics.

Mr. J. C. Hooper, M.A., Instructor in Science.

Miss Myrtle Hayward, Instructor in Household Science.

Miss Grace Robertson, Assistant Instructor in Household Science.

Miss A. MacKenzie, Instructor in Home Nursing.

Mr. A. Faulkner, Instructor in English and Mathematics.

Other instructors who have given special courses: .

Mr. A. W. Foley, Instructor in Poultry.

Mr. H. S. Pearson, Instructor in Dairying.

Dr. R. P. Talbot, Instructor in Veterinary Science.

Mr. William Grant, Special Lecturer and Demonstrator in Horse-shoeing.

Mr. W. F. Stevens, Special Lecturer in Hogs, and Demonstrator in killing and curing meat.

The following students are in attendance for the year's work:

<i>First Year Girls</i>	<i>Address</i>
Miss Esther Chambers	Claresholm, Alta.
Miss Mae Frankish	Foremost, Alta.
Miss DeWilla Little	Lomond, Alta.
Miss Idea Litchfield	Dinton, Alta.
Miss Alice Litchfield	Dinton, Alta.
Miss Mae Kingsley	Claresholm, Alta.
Miss Jean Bremner	DeWinton, Alta.
Miss Ida Larson	Claresholm, Alta.
Miss Janie Davis	Claresholm, Alta.
Miss Claribel Hocking	Magrath, Alta.
Miss Anna Coyne	Lethbridge, Alta.
Miss Catherine Madden	Carmangay, Alta.
Miss Ruth Caldwell	Warner, Alta.
Miss Ruth Holroyd	Warner, Alta.
Miss Emily Straughan	Parkland, Alta.
Miss Marjorie Shapley	Taber, Alta.
Miss Florence Yorgason	Claresholm, Alta.
Miss Selma Sorensen	Claresholm, Alta.

*First Year Girls**Address*

Miss Ada Funk	Claresholm, Alta.
Miss Mabel Smith	Champion, Alta.
Miss Hildred Anderson	Dinton, Alta.
Miss Mary Wells	Wellsville, Alta.
Miss Elizabeth Sundquist	Stavelly, Alta.
Miss Lella Pope	Blackie, Alta.
Miss Lydia Meneice	McEwan, Alta.
Miss Etta Sundquist	Stavelly, Alta.
Miss Agnes Hansen	Blackie, Alta.

*Second Year Girls**Address*

Miss Marie Caron	Aldersyde, Alta.
Miss Helen Wickson	Cayley, Alta.
Miss Effie Nowlin	Claresholm, Alta.
Miss Fanny Coombs	Cardston, Alta.
Miss Amy Straughan	Parkland, Alta.
Mrs. Clara Sundal	Taber, Alta.
Miss Lulu Winkler	Taber, Alta.
Miss Alta Whitehead	Claresholm, Alta.
Miss Rhoda Whitehead	Claresholm, Alta.

*First Year Boys**Address*

Peter Coyne	Lethbridge, Alta.
John Thomas	Rose Glen, Alta.
Albert Dicken	Fernie, B. C.
Martin Sanders	Sundial, Alta.
Oscar Sanders	Sundial, Alta.
Earl Holbrook	Travers, Alta.
John Walburger	Mountain View, Alta.
William Payne	Mountain View, Alta.
Jesse Cr��ss	New Dayton, Alta.
Walter Nelson	Spring Coulee, Alta.
Arthur Frankish	Foremost, Alta.
Edward Caron	Aldersyde, Alta.
Everett Keller	Cayley, Alta.
Lyle Benson	Commerce, Alta.
Edwin Beingessner	Champion, Alta.
Benjamin Bailey	Magrath, Alta.
George Davis	Claresholm, Alta.
Linn Tenney	Warner, Alta.
John Robinson	Burdett, Alta.
Roy Macleod	Granum, Alta.
Harold Stewart	Clear Lake, Alta.
Wesley Smith	Cravath Corners, Alta.
Nelson Fraser	High River, Alta.
Andrew Olson	Stavelly, Alta.
Donald Smith	Okotoks, Alta.
Grant Shuttleworth	Blackie, Alta.
Enos Leitch	Alderson, Alta.
Harold Owen	Steveville, Alta.
Clifton Bradshaw	Cravath Corners, Alta.
Harold Liddle	Burdett, Alta.
David McDonald	High River, Alta.
Francis McDonald	Vulcan, Alta.
Joseph Harris	Retlaw, Alta.
LeRoy Matkins	Magrath, Alta.
Hollis Bingham	Magrath, Alta.
Oris Long	High River, Alta.
Ehard Anderberg	Lomond, Alta.
George Fulton	Foremost, Alta.
O. P. Clausen	Jenner, Alta.
Jim Wiley	Cayley, Alta.
L. Armstrong	Amethyst, Alta.

<i>First Year Boys</i>	<i>Address</i>
M. Ririe	Magrath, Alta.
L. Ririe	Magrath, Alta.
H. P. Young	Gladys, Alta.
James Passey	Magrath, Alta.
<i>Second Year Boys</i>	<i>Address</i>
Stanley McGinnis	Carmangay, Alta.
Terrance Graham	Warner, Alta.
John Sears	Nanton, Alta.
John Nelson	Claresholm, Alta.
Otis Rice	Claresholm, Alta.
LeRoy Fitzpatrick	Lawndale, Alta.
Weldon Greenlee	Lawndale, Alta.
Milton Hansen	Aetna, Alta.
Anthon Malm	Retlaw, Alta.
Raymond Pollock	Retlaw, Alta.
John Burwash	Carmangay, Alta.
Ian Gehman	Okotoks, Alta.
Leon Walker	Claresholm, Alta.
Clarence Fredell	Blackie, Alta.
Sylvester Schumaker	Claresholm, Alta.
Charles Dullea	Stavely, Alta.
Alfred Matlock	Champion, Alta.
Chalmers Matlock	Champion, Alta.
Ross Walker	Reid Hill, Alta.

CLOSING EXERCISES.

In March of the spring of 1916 the Closing Exercises were held as reported on page 28 and 39 of the Annual Report for 1915.

COURSE IN AGRICULTURE.

The equipment in the Claresholm School of Agriculture is very satisfactory, enabling the instructors to carry out in a practical way the different agricultural subjects taught. All instruction is made to bear on the practical side of farming as it is in Southern Alberta. The following subjects are taught:

First Year Boys—Field Husbandry, Animal Husbandry, Blacksmithing, Concrete Work, Carpentry, Gas and Steam Engineering, Plumbing, Horse-shoeing, Principles of the Automobile and repairing of the same, Veterinary Science, Farm Dairying, Poultry, Horticulture, Chemistry, Physics, Botany, Farm Bookkeeping, English, Public Speaking, Mathematics, Butchering and Curing Meat.

Second Year Boys—Field Husbandry, Animal Husbandry, Veterinary Science, Dairy, Poultry, Horticulture, Chemistry, Farm Management, Farm Bookkeeping, English, Mathematics, Soil Physics, Botany and Entomology, Bacteriology, Butchering, Curing Meats, Public Speaking, Farm Mechanics, Building Construction and Concrete.

First Year Girls—Cooking, Sewing, Laundry, Household Administration, Physiology and Anatomy, Home Nursing, Sanitation, Foods, English, Mathematics, Horticulture, Farm Dairying, Poultry, Chemistry, Embroidery and Home Bookkeeping.

Second Year Girls—Cooking, Sewing, Household Administration, Hygiene, Home Nursing, Household Chemistry, English, Mathematics, Home Bookkeeping, Horticulture, Farm Dairying, Poultry, Bacteriology and Embroidery.

WEED INSPECTORS' CONVENTION.

During the summer of 1916 about seventy-five Weed Inspectors from various parts of the province gathered at the School of Agriculture, Claresholm, for three days. A program of addresses was arranged and the delegates showed keen interest in the remarks of the different speakers. As well, helpful discussion on various subjects was freely entered into.

Among the speakers were: Honourable Duncan Marshall, Minister of Agriculture for Alberta; Dr. Rutherford, of the Natural Resources Department of the C. P. R., Calgary; Dean Howes, of the Agricultural College, Edmonton; Mr. A. Mitchell, of the Coaldale Nursery, Coaldale, Alta.; Mr. J. McCaig, Department of Agriculture, Edmonton; Mr. J. C. Hooper, School of Agriculture, Claresholm; and Principal W. J. Stephen, of the School of Agriculture, Claresholm.

CO-OPERATION OF OTHER BRANCHES OF THE DEPARTMENT.

During the summer of 1916 a number of Field Crop Competitions were held throughout Southern Alberta which were judged by different members of the staff.

Some assistance, during the past year, has been given to the Department by the members of the staff addressing Institute Meetings and judging at Fairs.

Assistance was also given on the Demonstration Train which was run through the province last summer.

Lectures are given each summer, by several members of the staff, at the University of Alberta, when the Summer School for Teachers is held. Owing to the school being in operation, it has been impossible to give very material assistance during the winter Short Courses throughout the province.

SCHOOL FAIR WORK.

Under the direction of the Provincial Department of Agriculture, and in co-operation with the Educational Department, garden seeds, potatoes and eggs were distributed to the pupils of nineteen rural schools in the Claresholm district. The produce, grown by the children was exhibited at a School Fair held in September, 1916, at the School of Agriculture, Claresholm. About sixteen hundred exhibits were displayed, including not only the products supplied, but also livestock fed by the children, and cooking and sewing done by the girls.

Suitable prizes were given to the first three prize-winners in each school, and also a prize was given to the school having the best display.

The greatest interest was demonstrated, not only by the pupils of the schools, but by the parents and rate-payers of the different districts. Prospects are that if this work is continued even a greater success will be made of it than last year.

EXPERIMENTAL WORK AT THE SCHOOL OF AGRICULTURE.

There are twenty acres, adjacent to the school, allotted for experimental work. A small threshing outfit, which was purchased during the summer of 1916 by the Department of Agriculture, was very acceptable, as it enabled the agronomist to thresh successfully and without mixing the varieties of the different cereals that were grown for experimental purposes. An underground root cellar was constructed at small cost, by the help regularly employed at the school, which holds the potatoes, vegetables and roots.

The results obtained in 1916 of the grasses, clovers, alfalfas, corn and other crops that are difficult to grow in Southern Alberta, were very encouraging.

CULTURES.

About five hundred cultures, prepared by the Bacteriology Department of the school for the inoculation of clovers, alfalfas and peas, were delivered to farmers throughout the province of Alberta. A number of farmers in Saskatchewan and British Columbia also received these cultures.

EXCURSION AND SHORT COURSE TO SCHOOL OF AGRICULTURE AT CLARESHOLM DURING THE SUMMER OF 1916.

On August 7th, 8th and 9th the Department of Agriculture at Edmonton, Alta., held an Excursion and Short Course of three days at the School of Agriculture at Claresholm. About six hundred people were in attendance during this period. On the first day of the excursion addresses were given by Mr. H. A. Craig, Deputy Minister of Agriculture; Dean Howes, of the Agricultural College, and other prominent agriculturists. Mr. Carlyle, Superintendent of Demonstration Farms, took the excursionists over the demonstration farm, and Principal W. J. Stephen explained the work being carried on on the experimental area at the school.

On the second and third days lectures and practical demonstrations were given on "Gas Engines" by Mr. Holeton, of Olds Agricultural School; on "Cereal Crops" by Mr. Grisdale, Principal of the Agricultural School at Vermilion; "Livestock" by Messrs. Myers, Clements and Carlyle; "Weeds" by J. C. Hooper, M.A., and J. D. Smith, Superintendent of the Seed and Weed Branch, Edmonton; "Poultry" by Mr. Foley, Superintendent of Poultry, Edmonton; "Dairies" by Messrs. H. H. Hotten, Davis and Robertson; and "Home Nursing" by Miss MacKenzie.

HONOUR ROLL.

The following students are on active service in Europe:

H. Middleton	E. Buckingham	John Walker
J. McDonald	Lt. J. J. Jamieson	E. J. Hirsch
W. A. Porter	H. Campbell	P. Peterson
S. Leitch	J. Horner	J. Mitchell
Stewart Ellis	T. A. Sundal	R. G. McLean
Harold Hansen	H. W. Jackson	C. Ceevers
Frank Yeo	Lester Barr	Phil. Williams

OLDS SCHOOL OF AGRICULTURE

SIR,—I beg to submit the report of the Olds School of Agriculture. This is my third Annual Report covering the work of this School of Agriculture, together with the extension and other work that has been undertaken by the staff.

THE PERMANENT STAFF.

W. J. Elliot, B.S.A., Principal.
J. G. Taggart, B.S.A., Instructor in Science.
A. E. Meyer, L.L.B., Instructor in Animal Husbandry.
O. S. Longman, B.S.A., Instructor in Agronomy.
G. R. Holeton, Instructor in Mechanics.
J. H. McNally, Instructor in English and Mathematics.
Miss E. Cuming, Instructor in Household Science.
Miss M. E. Story, Assistant Instructor in Household Science.

Other instructors who have given special courses:

Wm. Grant, Instructor in Blacksmithing.
A. W. Foley, Poultry Superintendent.
H. S. Pearson, Instructor in Dairying.
W. J. Beckett, Assistant Instructor in Dairying.
Dr. P. Talbot, Instructor in Veterinary Science.
Miss A. McKenzie, Instructor in Nursing.

SCHOOL YEAR.

While we have not quite the number of students in attendance that were present during 1915-16, yet the large number that we have necessitates the same number of classes and consequently the work is quite heavy and constant on the entire staff. Three changes have been made in our staff during the past year. Miss Davis, who was Assistant in the Household Science Department during 1915, took the Headship when Miss Goldie resigned and Miss Cuming of Edmonton succeeded to Miss Davis' position. During the Christmas holidays Miss Davis joined the matrimonial ranks and Miss Cuming was then moved to first place with Miss Story of Elbow, Saskatchewan, as Assistant. Mr. Meyer was added to the staff as instructor in animal husbandry.

I would like at this time to speak a word of appreciation for the faithfulness on the part of the staff, who have at all times been more than anxious to carry on the work of the Institution. I wish to express also appreciation to Mr. H. A. Craig, Deputy Minister of Agriculture, Dr. Tory, Mr. A. E. Howes, Mr. A. Galbraith, Mr. James Clements, Dr. P. Talbot, Mr. A. W. Foley and Mr. W. F. Stevens, who so kindly assisted the work of the Institution with special lectures and demonstrations.

Twenty-five students received their diplomas at last spring's graduating exercises. Twenty-one of these were boys and four were girls. Dr. Tory, President of the University, and Mr. H. A. Craig, Deputy Minister of Agriculture, delivered addresses to a very large gathering in the school auditorium, after which Dr. Tory, in the name of the Minister of Agriculture, presented the diplomas to the students who had completed the course.

The same thing may be said this year with regard to discipline as has been recorded in previous reports. The students who come to us are largely from the farms of Alberta and as they are more or less mature and are conscious of the fact that they are here for a definite purpose, the disciplinary end of the Principal's work is very light indeed. It is true that a few minor matters come up for attention, but the students' council, which has been organized, assists the Principal very much in the handling of what otherwise might be difficult problems.

ATTENDANCE OF STUDENTS.

During the past year our total attendance was 134, being not quite equal to that of 1915-16. This, of course, is not surprising in view of the fact that the War is on and a large number of our students have enlisted for active service at the Front. Thirty-one of our students are enrolled in the second year and one hundred and three in the first year; in the second year there are twenty-three boys and eight girls, while in the first year there are fifty-one boys and fifty-two girls. It will be gratifying to you to note the large attendance of girls this year, as it is the first time the girls have more than equalled the boys in number in the first year classes. This, however, may be accounted for somewhat by the fact that the War has drawn very heavily on the students of the Olds School of Agriculture, as up to date thirty-eight of our students have enlisted for active service at the Front. Two of the Olds students have already paid the supreme price in France and four others have been seriously wounded.

EXTENSION WORK.

Cow Testing.—During the summer months the Dairy Test work that had been instituted two years previously was carried on with a considerable amount of success. In all thirty-eight farmers with a total of four hundred and fifty-three cows took part in the contest for the year. Mr. Holeton, who had charge of this work, visited the farmers as frequently as possible and kept very accurate records of the milk produced and the tests of that milk for the above mentioned farmers. In all, some 1989 milk samples were tested. It was our hope that this dairy test work might continue throughout the winter, but it will be realized what a difficulty the farmers of this and other districts of the province had to harvest their crops through the fall of 1916. Owing to the long continued wet weather the farmers were very busy with the harvest and were not in the mood for recording the weights of the milk, thus seriously interfering with the contest. After the harvest weather was over very few farmers had cows that would be milking for the winter and consequently it was thought best to discontinue the work for the time being. We can safely say, however, that considerable good has been accomplished in this district by the dairy test work which has been carried on by the School of Agriculture. This fact is evidenced in the various sales that have been held from time to time, for when cows are put up for sale with a record established during our contest, it invariably enhances their value. On the other hand, people are very wary about purchasing cows that do not have any definite record.

School Fair Work.—The writer undertook to introduce agriculture in a number of rural schools in the Olds District. This was done at the same time and along similar lines as that undertaken at four other points in the province. The Government supplied free vegetable and flower seeds and a limited number of eggs to the boys and girls in the rural schools of this district, and in addition to the above, the boys and girls were to raise calves, break colts, etc. For the household science end of the work a considerable amount of sewing and baking was to be exhibited. A fair was held in the fall which was distinctly a boys' and girls' fair where the vegetables, flowers, cooking, baking, live stock, etc., were exhibited.

This work was done in perfect harmony with Inspector Aylesworth of the Olds District and the undersigned is greatly indebted to him for valuable assistance rendered.

In all, twenty-one schools entered the contest with over 300 boys and girls taking the seeds, eggs, etc. In the fall 287 boys and girls made exhibits at the fair and there was a total of 624 exhibits on hand. Parents and friends of the children were invited to this special fair and it is needless to say that the boys and girls thoroughly enjoyed a day that was definitely set apart for the exhibition of their own work.

Agronomy Extension Work.—It is generally understood that the agronomist at each school conducts certain experimental work with grains, grasses, etc., in order to study the peculiar conditions of each locality. Mr. Longman continued the work that had been undertaken by Mr. Grislate at this school. The first line of work was the finding of varieties of grains and grasses that were best suited to the district. To secure these data, rather extensive experiments were undertaken with regard to the various varieties of wheat, oats and barley, together with the grass crops and we hope that we will soon be able to report fairly definitely with regard to some of these crops. It will be appreciated, of course, that one, two or even three years' work is not to be thoroughly relied upon and records of this kind only become authentic when a large number of years proves the results to be correct.

Cultural methods is another line of experiment in the agronomy division. These cultural plots have been undertaken with a view to studying our new soils and if possible to find the best methods of handling them.

A third line of work undertaken has been that with grass and legume crops. While the Olds district is very well adapted to the growing of timothy, yet so far very little is known with regard to what other grasses and legumes will do on the land. A large number of plots of the various kind of grasses have been grown and will be reported on from time to time. In addition, considerable work has been done with garden crops which include all classes of vegetables and tests have also been made with various varieties of turnips and mangolds. The same may be said with regard to these latter as was said with regard to the cereals. It is certainly not wise to report on the adaptability of crops to a district until a sufficient number of years have proved that our opinion is fairly correct.

Experimental Union.—Two years ago an Experimental Union was organized under the auspices of the Agronomy Department of the School of Agriculture but during the past season with the pressure of work that came from our own experimental work and also from the running of the Special Train and other matters, it was impossible to give this work the attention that it deserved. We, however, hope another year to be able to carry this work on with the ex-students of the School of Agriculture.

Co-operation With Demonstration Farm.—While the Principal of the School of Agriculture has nothing to do with the Demonstration Farm proper, yet we wish here to indicate the cordial relationship that exists between the Demonstration Farm and the School of Agriculture. Arrangements have been made whereby the school has free use of the live stock on the Demonstration Farm for instructional purposes. The very great advantage in this will be seen at a glance when we remember that the School of Agriculture has splendid stock to work with, and no expense whatever in keeping same. We wish here to express our appreciation of the help received from the manager of the Demonstration Farm during the past year.

Institutes and Short Course Schools.—During the winter the large attendance of students keeps the staff of the school pretty closely confined to instructional work, but from time to time the various members of the staff are called upon to go to various points to help in the matters of farmers' institutes and other meetings. The services of the staff are also required frequently during the summer as judges for the various fairs in the province. This work no doubt is appreciated by those on the outside, but we think it is equally appreciated by the members of the staff because it gets them away from the institution and in touch with the men who are doing the actual work on the farm in the province and consequently they are the better equipped for the instructional work that is demanded of them during the winter months.

Special Train.—During June and July of the past summer a special train was run by the Department of Agriculture over various railroad lines in the province. It fell to the lot of the Principal of the Olds School of Agriculture and his staff to prepare the three baggage cars that were to be fitted up to represent the work of the Schools of Agriculture. One of these cars was equipped to represent the work of the household science department, where the sewing, cooking, laundry and kitchen work was exhibited and demonstrated at all points where the train stopped. A second car was fitted up with the grains and grasses of the province, together with cards, describing in terse language the various points that should be brought to the attention of the man on the land. A third car was fitted up with the work from the blacksmith and carpentry shops of the three Schools of Agriculture and great was the praise of a large number of people at the character of the work that is carried on. The other end of this same baggage car was equipped with a number of pieces of machinery representing the things that might be added to the ordinary farm in the way of making work less both inside and outside the home. This included a farm-size electric light plant, crusher, pump, grind-stone, cream-separator and washing-machine.

Correspondence Work.—The correspondence in connection with the office at the School of Agriculture at Olds is increasing each year. A large number of enquiries come from the farmers of the central portion of the province, asking for information on a great variety of subjects, pertaining to farm work. We feel that this is an important part of our work and endeavor to give it rather special attention. Last year we reported 2671 letters for the year, while from February 1st, 1916, to February 1st, 1917, the correspondence has risen to 2484 letters. This does not include a large number of circulars that have been sent out from time to time to the papers in the district and to students and others.

SCHOOL BUILDING OPEN TO PUBLIC.

It is the endeavor on the part of the staff of the Olds School of Agriculture to make the school and its staff of real assistance to the farmers in the district. The school is open all year round and one or more members of the staff are on hand at all times to meet strangers or to help those who may come with difficulties. The school building is used during the summer months for farmers' meetings of various kinds.

W. J. ELLIOT,

Principal.

VERMILION SCHOOL OF AGRICULTURE

SIR.—I beg to submit the report of the Vermilion School of Agriculture.

This report covers the work of the Vermilion School of Agriculture during the summer and fall of 1916 and the first two months of 1917. It is the fourth year of operation for the Vermilion School of Agriculture.

The names of the members of the staff and the departments administered by each are as follows:

F. S. Grisdale, B.S.A., Principal and instructor in Agronomy and Horticulture.

E. S. Hopkins, B.S.A., M.S., instructor in Elementary Science and Farm Management.

H. H. McIntyre, B.S.A., instructor in Animal Husbandry and Farm Bookkeeping.

G. L. Shanks, B.S.A., instructor in Farm Mechanics.

J. J. Loughlin, instructor in English and Mathematics.

Miss F. O. Hotton, instructor in Household Science.

Miss A. M. Lavallee, Assistant instructor in Household Science.

Other instructors have visited the school at different times for the purpose of giving certain arranged courses. They are:

G. W. Scott, Dairy and Poultry.

P. R. Talbot, D.V.S., Veterinary Science.

Miss Annie McKenzie, Home Nursing.

ENROLMENT.

That the work done by the school is being appreciated is strikingly illustrated by the fact of an increased attendance during this school year. In the first and second years of the school's operation the total enrolment in each case was fifty-five; during the third year's course it was fifty-eight and this year it is seventy-one. This attendance is made up as follows: In the first year there are thirty-one men and nineteen women; in the second year there are seventeen men and four women.

Of the twelve first year women registered during the school year of 1915-16 only four, or thirty-three per cent., returned this year to complete their course. This poor showing may partly be explained by the course, as it now stands, failing to qualify those who take it for any public position that would enable them to draw a remunerative salary and make a living. I feel sure that this low percentage returning in the second year could be improved if provision were made to allow the women the same privilege as the men now experience, that is, to continue their course along more advanced lines in the University for a certain period of time. After so doing they would have recognition not only in the home, but also in the Department of Education. Then the women who did not wish to remain in the home could use their training in making

a living. Such an arrangement, undoubtedly, would mean a keener interest in the Household Science course with a larger proportion of those who registered qualifying for the Agricultural school diploma in Household Science.

In considering the attendance in the second year Agriculture, it will be observed that the percentage of students returning is much more satisfactory. Out of a total of twenty-six first year men during the school year 1915-16, seventeen or sixty-five per cent. are back this year completing their course. It is very gratifying to the school and is in part at least the result of the attractiveness of the curriculum. In addition, the possibility of obtaining advanced study in Agriculture at the University after taking the diploma from the Agricultural school attracts a considerable number.

Five of the thirty-one first year men are returned soldiers. They entered the school after the new year. Four of these are making good progress in their work. They are receiving a certain amount of special instruction in some branches of the school work. The fifth man, Pte. Whistlecroft, owing to poor health remained only two weeks at the school. The school is notified that six more veteran soldiers are about ready to enter the agricultural course.

The following young men, whose ages vary from sixteen to thirty-two, are registered at the Vermilion School of Agriculture:

FIRST YEAR MEN.

H. J. Blackwell	Lloydminster, Sask.
C. Cairns	Islay, Alta.
Alfred Elvidge	Edmonton, Alta.
W. C. Esdale	Edmonton, Alta.
Wm. Frunchak	Andrew, Alta.
A. P. Hunter	Innisfree, Alta.
James Law	Cardiff, Alta.
Chas. Lewis	Bon Accord, Alta.
A. L. Loveseth	Camrose, Alta.
Alex. Martin	Strathmore, Alta.
Vernon Meagher	Yonker, Sask.
Alvin Miller	Kitscoty, Alta.
R. Mulligan	Bon Accord, Alta.
Chas. McAllister	High Prairie, Alta.
Sydney Parr	Lloydminster, Alta.
John Parminter	Clover Bar, Alta.
J. W. Paterson	Toronto, Ont.
John K. Steele	Clark Manor, Alta.
Fred Sampert	Bruderheim, Alta.
C. Stienfort	Ft. Saskatchewan, Alta.
W. Tainsh	Hay Creek, Alta.
L. J. Taverner	Sedgewick, Alta.
Albert Todd	Ft. Saskatchewan, Alta.
J. C. Tucker	Vermilion, Alta.
E. C. Wallace	Blind River, Ont.
A. S. Ward	Grande Prairie, Alta.
John W. Welbourn	Winterburn, Alta.
Cyrus H. Wilkinson	Clover Bar, Alta.
J. Whistlecroft	Edmonton, Alta.
J. E. Whitestien	Westlock, Alta.
Oscar Younge	Chailey, Alta.

SECOND YEAR MEN.

S. Barnes	Blackfoot, Alta.
L. W. Bryant	St. Albert, Alta.
J. G. Clark	Clark Manor, Alta.
R. H. Dunlop	Calmar, Alta.
A. Gibson	Excelsior, Alta.
Stanley Hall	Strathcona, Alta.
W. L. A. Hanrahan	Edmonton, Alta.
Julius Hansen	Camrose, Alta.
William Hansen	Innisfree, Alta.
Waldie Hawkins	Killam, Alta.
Hans Manski	Macklin, Sask.
Jas. Martin	Strathmore, Alta.
Jas. Meagher	Yonker, Sask.
J. H. Minns	Athabasca, Alta.
C. Scott	Warwick, Alta.
B. E. Williams	Bon Accord, Alta.
G. M. Williams	Bon Accord, Alta.

Following is a list of the names and addresses of the young women registered at the Vermilion School of Agriculture in the Household Science Department:

FIRST YEAR WOMEN.

Miss Ida Aasmo	Tofield, Alta.
Miss J. Cairns	Islay, Alta.
Miss Mary Cairns	Islay, Alta.
Mrs. Grant Currie	Vermilion, Alta.
Miss Ruth Daly	Vermilion, Alta.
Miss Marjorie Ducey	Vermilion, Alta.
Miss Jessie H. Goodall	Ryley, Alta.
Miss Lucille Gray	Tofield, Alta.
Miss Irene M. Kehoe	Vermilion, Alta.
Miss Ledra Lewis	Bon Accord, Alta.
Miss Helen Mead	Vermilion, Alta.
Miss Borghild Moe	Tofield, Alta.
Miss Tena Murphy	Vermilion, Alta.
Miss Helen McGinnis	Vermilion, Alta.
Miss Elsie Maud McGregor	Minburn, Alta.
Miss Gwendolin A. Owen	N. Cooking Lake, Alta.
Miss Lola M. Richardson	Vegreville, Alta.
Miss Ethel L. Stibbards	Wabamun, Alta.
Miss Bertha Stewart	Strathcona, Alta.

SECOND YEAR WOMEN.

Miss Rose Connelly	Vermilion, Alta.
Miss Violet Gardiner	Irwinville, Alta.
Miss Bernice Scott	Strathcona, Alta.
Miss Beth Witherbee	Vermilion, Alta.

'TWO YEARS' INSTRUCTION.

The course in the School of Agriculture consists of two terms of five months each. The first term begins about the first of November and ends the last of March. Those students successful in passing the examination at the end of the first year are allowed to enter the second year of the course. At the end of the second year a final examination is given. A diploma is granted to all those who pass this final examination. In addition to this all those in the Agricultural course, who, in the opinion

of the examining board are eligible, are given entrance standing to the Faculty of Agriculture in the University of Alberta. The course in agriculture at the University covers three years and if successfully concluded commands the degree of Bachelor of Science in Agriculture.

COURSES IN AGRICULTURE.

All the instruction in the Vermilion School of Agriculture is made to bear on the practical side of farming. The school has an excellent equipment in all departments. It is a matter of considerable satisfaction to the instructors in the school to realize that each year the courses in the various departments are becoming more valuable to the students; more valuable because the experience of the work in previous years is used in working out the course of study for the year in question. The useful material is retained and the less valuable parts discarded to give place to material which is considered to be more serviceable. The course of study is as follows: Soils and soil cultivation, judging, feeding and care of live stock, the identification and eradication of weeds, judging and grading seed grain, selection of seed grain, rotation of crops, veterinary science, carpentry, blacksmithing, farm machinery, cement work, gasoline engines, road building, growing of small fruits, vegetables, trees and shrubs, killing, cutting up and curing meats, farm management, and elementary courses in mathematics, book-keeping, chemistry, physics, English, public speaking and reading. In the poultry and dairy departments, useful lines of practical work have been introduced and have proven to be very popular. In poultry, crate feeding, killing and marketing of chickens was again undertaken with the first year and the care and management of a farm flock of hens for winter egg production was carried on a second time by the second year. Both of these ventures covering two years have proven interesting and highly instructive. In dairying, instruction is given in cheesemaking, milk production, milk testing, buttermaking, care of separators, etc.

DOMESTIC SCIENCE COURSE.

The home-makers' course is primarily one of a very practical nature. It is intended to make the girls who take it efficient home-makers. It includes enough theory to make the practical truly valuable. In this course, sewing, cooking, home nursing, laundering, household administration, physiology, and hygiene, sanitation, foods, household book-keeping, dairying, poultry, horticulture, physical culture and courses in elementary English, mathematics, chemistry, and physics are taught.

STUDENT ORGANIZATIONS.

In addition to the purely academic work the students have various organizations. They are:

A.—The Student Self-Governing Organization. This organization makes the matter of discipline at the Vermilion School of Agriculture of very little worry to the principal and at the same time is satisfactory and adds to the success of the institution.

B.—The Literary Society, which holds weekly meetings, is given over to a program of debates, spelling matches or some kind of other entertainment in the assembly room of the school. Open debates are held once a month and it is gratifying to note the benefit derived by most of the students from the meetings, especially in the matter of being able to stand naturally and express themselves properly to an audience.

C.—The Athletic Association is active and has arranged for various kinds of exercise. There is a good open air rink at the school and they have skating and hockey games almost every day of the week in spare hours, at noons or in the evenings.

D.—The Y.M.C.A. has done valuable service to the students in the school. The association meets each Thursday afternoon. A speaker is supplied for each meeting. At the end of each address latitude is given for the students for open discussion of the subject in question.

EXPERIMENTAL WORK.

In connection with the school there is an experimental area of twenty acres. On this land numerous experiments are conducted. The results derived from these tests are used in the instruction given in the school and at institute meetings. The following experiments were conducted this season:

Variety tests with potatoes, wheat, oats, barley, flax, peas, corn, millet, buckwheat, grasses, alfalfa, vegetable crops, small fruits, root crops, trees, shrubs and flowers. Unfortunately two severe hail storms in August this year ruined our crops from an experimental standpoint.

FARMERS' SHORT COURSE.

On July 31st, August 1st, and 2nd, short courses were put on at the Vermilion School of Agriculture. Courses were arranged for both men and women and proved to be very much appreciated by the small number in attendance. In spite of the excursion rates, arranged for by the department, there were only one hundred and fifty attended during the three days period. Work is usually too pressing at that particular season of the year to permit many farmers leaving home for more than a day at a time. Hence, it is probable that the one day excursion is more advantageous and profitable to the majority of people concerned.

EXTENSION WORK.

The work of the staff connected with the Vermilion School of Agriculture is broadly speaking, divided into two parts, that of instruction during the five winter months, and extension work with the students and farmers during the remaining part of the year. This extension work embraces many phases of agriculture. The Animal Husbandry Instructor is available to farmers for consultation on live stock problems. The Mechanics Instructor gives valuable advice and information on building plans, engines, blacksmithing and carpentry. The Science Instructor is used by the public in various ways. For instance, he

ready to assist them in soil and crop problems. The Agronomist conducts considerable extension work with the farmers and students in the district which is served by the school. He co-operates with them in testing out varieties of grains, grasses, clovers and cultural methods of one kind and another. Judges are supplied to a large number of fairs, institute meetings are addressed, good farming competitions judged, and grain crops inspected for the Canadian Seed Growers' Association. Instructors are supplied to the Summer School for Teachers in Edmonton.

SCHOOL FAIR WORK.

As an additional part of our extension work a rural school fair was organized with the object of interesting in agriculture all children of school age within a radius of twenty miles of Vermilion.

To this end nineteen schools were visited early in May and a short address given setting forth the details of the plan for the School Fair and also pointing out to the pupils the advantages of holding a Fair. Each pupil was offered certain vegetable seeds, potatoes or flower seeds and a limited number of settings of eggs (six) were also offered in each school district.

In the nineteen schools visited there were approximately two hundred and ten pupils enrolled and to these were distributed the following materials:

- 113 lots of Gold Coin potatoes (5 lb. lots).
- 94 sets of flower seeds (1 package each of Sweet Peas, Sweet Alyssum, Nasturtium and Candytuft.)
- 105 packages of beets.
- 143 packages of carrots.
- 64 packages of field carrots.
- 148 packages of peas.
- 88 packages of turnips.
- 54 packages of mangels.
- 94 settings of eggs (Rhode Island Reds).

The understanding under which this material was distributed was that the seeds were to be planted at the pupil's home and the produce exhibited at the School Fair, the prize list covering, in vegetable and flower classes, only vegetables and flowers grown from the seeds distributed.

In organizing the work and in distributing the seeds, potatoes and eggs, each school was visited twice. The total distance travelled was six hundred and eleven miles. The work was done between April 17th and May 19th.

In the month of August from the seventh to the twenty-sixth, each pupil was visited and his garden plot inspected, a prize of \$1.50 being given in each school district to the boy or girl having the best kept plot. This necessitated travelling seven hundred and twenty miles. The most noticeable feature of the inspection work was the discovery of the large amount of damage done by cutworms to the garden plots not only of the children, but also to the general garden of the farm.

As nearly as can be estimated 50% of the gardens inspected were seriously damaged and 10% were practically a total loss. It would appear that investigations designed to discover better methods of cut-worm control would be very profitable for this district.

The School Fair was held on the Fair Grounds, Vermilion, on September 15th in conjunction with the Agricultural Society Fair. The exhibits were housed in a new tent belonging to the department which was pitched near the main agricultural building. The total number of exhibit entries was approximately six hundred. Eight schools contributed a majority of the entries, while three schools made no exhibits. The judges were supplied from the Department of Agriculture.

Considered in the nature of an experiment it may be said that the interest aroused in the children and their parents has more than justified the time and expense which were devoted to the organization and direction of the School Fair.

SEED TESTING.

The seed testing work at the Vermilion School of Agriculture is developing rapidly. To date this year over nine hundred samples of seeds have been tested. This is considerably more than were tested a year ago. The value of the work is fully realized and farmers are being encouraged to send in samples from all grain intended for seed. The result of the germination tests will show them to a great extent the value of the grain for seed.

HONOUR ROLL.

Edward Sparrow, Sedgewick.
Alex. Sparrow, Sedgewick.
Philip Ure, Vermilion.
William Sheppard, S. Edmonton.
Floyd Shaw, Vegreville.

J. D. McPherson, Red Deer.
Wilfrid Eyre, Vermilion
A. G. Moore, Jarrow.
Herbert Spencer, Edgerton.
Frank Gracey, Edmonton.

F. S. GRIDALE.

Principal.

RESULT OF PRACTICAL POULTRY WORK

CONDUCTED BY THE VERMILION SCHOOL OF AGRICULTURE UNDER THE
DIRECTION OF MR. GEO. W. SCOTT.

The purpose of this experiment was to demonstrate to the students how poultry should be finished on the farm for market, and to provide practice to the students in selecting, preparing and dressing fowls.

The birds were fed in the crates for a period of three weeks. Each bird was leg-banded and weighed before being placed in the crate, and again weighed at the end of the seventh, fourteenth and twenty-first day respectively.

The Domestic Science students took a keen interest in the poultry work, each girl plucked and dressed one bird for market, and in addition, each second year girl took part in the work of feeding the poultry.

By means of accurate records, comparisons were made of the gain in weight of each bird, and the factors determining such gain were carefully considered.

On November 22, fifty-six (56) birds were divided into five lots and placed in crates. The daily quantity of ground feed for each bird was increased from two ounces at the commencement of the feeding period, to five ounces during the last six days.

The various ground grains were sifted to remove the coarser hulls; the finer portions were then mixed with buttermilk in a proportion approximating ten pounds of meal, to eighteen to twenty pounds of milk. The feed for each crate of birds was weighed into the feed pails directly after feeding at 8.30 a.m. and 5.30 p.m.



FLOCK OF WHITE WYANDOTTES SHIPPED TO FARMER AS BABY CHICKS
FROM PROVINCIAL POULTRY PLANT AT EDMONTON

Crate No. 1 in which there were eleven birds, consumed:

49½ lbs. of oat chop at \$1.50 per cwt.	\$.74.3
5½ lbs. of shorts at \$1.35 per cwt. ....	.07.4
x28 lbs. of siftings at \$1.50 per cwt. ....	.42
126½ lbs. of buttermilk at 10c per cwt. ....	.12.7
	<u>\$1.36.4</u>

Crate No. 2 in which there were eleven birds, consumed:

24 lbs. of oat chop at \$1.50 per cwt.	\$.36
16½ lbs. of wheat screenings at \$1.00 per cwt. ....	.16.5
14½ lbs. of shorts at \$1.35 per cwt. ....	.19.6
x14 lbs. of siftings at \$1.50 per cwt. ....	.21
126½ lbs. of buttermilk at 10c per cwt. ....	.12.7
	<u>\$1.05.8</u>

Crate No. 3 in which there were eleven birds, consumed:

32 lbs. of oat chop at \$1.50 per cwt.	\$.48
23½ lbs. of wheat screenings at \$1.00 per cwt. ....	.23.5
x18 lbs. of siftings at \$1.50 per cwt. ....	.27
127½ lbs. of buttermilk at 10c per cwt. ....	.12.7
	<u>\$1.11.2</u>

Crate No. 4 in which there were eleven birds, consumed:

20 lbs. of oat chop at \$1.50 per cwt.	\$.30
7 lbs. of wheat screenings at \$1.00 per cwt. ....	.07
13 lbs. of barley chop at \$1.50 per cwt. ....	.19.5
15½ lbs. of shorts at \$1.35 per cwt. ....	.20.9
x18 lbs. of siftings at \$1.50 per cwt. ....	.27
127½ lbs. of buttermilk at 10c per cwt. ....	.12.7
	<u>\$1.17.1</u>

Crate No. 5 in which there were twelve birds, consumed:

28 lbs. of oat chop at \$1.50 per cwt.	\$.42
10½ lbs. of barley at \$1.50 per cwt. ....	.15.8
7 lbs. of wheat screenings at \$1.00 per cwt. ....	.07
16½ lbs. of shorts at \$1.35 per cwt. ....	.22.6
x21 lbs. of siftings at \$1.50 per cwt. ....	.31.5
143 lbs. of buttermilk at 10c per cwt. ....	.14.3
	<u>\$1.33.2</u>

Weight of Birds

	Crate No. 1	No. 2	No. 3	No. 4	No. 5	Total
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
Nov. 22	50 5	46 9	50 6	50 8	51 4	249 0
Dec. 13	64 5	60 13	64 14	65 6	68 10	324 0
After 24-hour fast....	62 10	58 13	63 6	64 6	67 6	316 9
After bleeding and plucking	55 9	52 15	55 7	56 4	60 6	280 9

Average live weight of birds when crated was 4 lbs., 7 oz.

Average live weight of birds when fleshed was 5 lbs., 12 oz.

Average dressed weight of birds was 5 lbs., 0 oz.

The average loss in live weight during second 12 hour fast: 2.125 oz.

The average loss from bleeding and plucking was 10.286 oz.

Gains

Crate No. 1—14 lbs. of gain in live weight with 55 lbs. ground grain.

Crate No. 2—14¼ lbs. of gain in live weight with 55 lbs. ground grain.

Crate No. 3—14½ lbs. of gain in live weight with 55½ lbs. ground grain.

Crate No. 4—14¾ lbs. of gain in live weight with 55½ lbs. ground grain.

Crate No. 5—17¾ lbs. of gain in live weight with 62¼ lbs. ground grain.

Crate No. 1—1 lb. gain in live weight made with 3.88 lbs. ground grain.

Crate No. 2—1 lb. gain in live weight made with 3.85 lbs. ground grain.

Crate No. 3—1 lb. gain in live weight made with 3.83 lbs. ground grain.

Crate No. 4—1 lb. gain in live weight made with 3.39 lbs. ground grain.

Crate No. 5—1 lb. gain in live weight made with 3.58 lbs. ground grain.

Average of 1 lb. gain in live weight made with 3.79 lbs. ground grain.

Cost of 56 chickens—249 lbs. at 13c per lb.

Total cost of feed (\$1.36.4, \$1.05.8, \$1.11.2, \$1.17.1, \$1.33.2)

\$38.41

The revenue from the sale of:

48 chickens, 243 lbs. at 18c to 23c	\$54.53
3 chickens, 18 $\frac{1}{4}$ lbs. at 20c	3.65
5 chickens, 19 $\frac{1}{4}$ lbs. at 18c	3.45
	<u>\$61.63</u>
Less express charges	2.85
Net revenue	<u>\$58.78</u>

Cost of Production

75 lbs. of gain in live weight made for	\$ 6.04
Cost of producing 1 lb. gain in crate No. 1 .....	.09.74
Cost of producing 1 lb. gain in crate No. 2 .....	.07.43
Cost of producing 1 lb. gain in crate No. 3 .....	.07.67
Cost of producing 1 lb. gain in crate No. 4 .....	.07.87
Cost of producing 1 lb. gain in crate No. 5 .....	.07.66
Average cost of producing 1 lb. gain .....	.08.05
Total profit on 56 birds	<u>\$20.37</u>
Average profit on each bird	<u>.36.37</u>

Although excellent gains were made they are not exceptional; they may easily be duplicated by any farmer who has the proper type of poultry for fleshing and who has a knowledge of the work.

The oats and barley used were coarsely ground; about one-third of the chop being removed as hulls. The loss from this source was at least twice what it should have been could we have finely ground grain, and the resulting profit would have been increased from 36.37 to 39.05 cents per bird.

The cost of feed was fifty per cent. higher and the live birds were purchased at an increase of three cents per pound more than a year ago, but there was a corresponding increase in the price per pound received for the dressed poultry, which nearly offset the increase in cost, and fleshing, being only one cent per bird less profit this year than a year ago.

Of the fifty-six birds purchased, thirty-seven were of good type, fifteen were of medium type, and seven were poor specimens for fleshing purposes. A number of the birds were in excellent flesh when placed in the crates, and on these birds the gain in weight was small.

In general it may be said that the greatest gains will be made, and the best quality of dressed carcass will be produced when:

1. Thin, healthy birds are placed in the crates.
2. Birds of good type and of uniform size are fed.
3. Birds are free from insect vermin.
4. The feeder observes closely the condition and appetite of the birds.
5. The quantity of feed is gradually increased throughout the fleshing period, reaching the capacity of the bird during the last week.
6. The birds are fed only so long as gains commensurate with the quantity of food eaten are obtained.
7. The birds are starved for twenty-four hours before killing.
8. The birds are killed by severing the jugular veins and piercing the brain through the roof of the mouth.
9. The birds are properly cooled and shaped before packing in the shipping cases.



WATCHING THE JUDGING OF COLTS AND CALVES AT THE OLDS SCHOOL
FAIR
LINE-UP OF CALVES AFTER PRIZES HAVE BEEN PLACED

REPORT OF THE DISTRICT AGENTS

SIR,—The Department of Agriculture created this year a new division known as the District Agents. The function of this division is to conduct extension work in several districts throughout the province. Agents were located at five places: at the three Schools of Agriculture, Claresholm, Olds and Vermilion and at Sedgewick and Stony Plain. The agents were secured from the staffs of the Schools of Agriculture: H. W. Scott was located at Claresholm, Principal W. J. Elliot at Olds, G. L. Shanks at Vermilion, J. G. Taggart at Sedgewick, and H. H. McIntyre at Stony Plain. The men carried on their work from April to October.

Many farmers have difficulty in knowing where to go or write for information. They are aware in a general way that the Department of Agriculture is a branch of the government service designed to assist in solving various farm problems, but the Department of Agriculture is a long way off and frequently the farmer doesn't bother writing. Now, the object of the District Agent is to overcome this. He is located permanently in a district, has a car and an office in some central town, and farmers get to know him personally. They will then know to whom to write and often will be able to visit the District Agent in his office when they come to town. Such service is rendered free of any charge by a man who has graduated from an agricultural college and has himself extensive practical experience in farm operation. Farmers are invited to make use of this and it is hoped that the officers of agricultural organizations will assist in making it known to their members.

The District Agent may undertake extensive lines of work. He will be able to examine seed grain for germination capacity and for noxious weed seeds; test milk for butter fat and collect samples of well water to be tested by the Provincial Analyst. He will be able to take levels for open drains and for tile drains where these are necessary; frequently the construction of an open ditch would drain the water from a slough and make it available for cultivation. Outbreaks of contagious diseases of stock will be promptly reported to the Provincial Veterinarian in order that they may be checked. Co-operative marketing associations may be organized in certain districts to promote the sale and purchase of farm commodities. Addresses on agricultural subjects will be given at farmers' meetings. School fairs may be organized in certain districts. Farmers will be visited upon request and any problem will be discussed with them. It is obvious that the District Agent cannot pretend to be a specialist on all these various lines, but he will have a general knowledge of them and he will be able to confer with specialists of the Department of Agriculture whenever he is in doubt.

The chief work of the District Agent this summer has been the introduction of Agriculture by means of home gardens in a number of rural schools throughout the province. In following years the scope will be enlarged to include other lines mentioned above.

The reports of the District Agents at Claresholm, Olds, and Vermilion appear in the Reports of the Schools of Agriculture. The reports of the District Agents at Sedgewick and Stony Plain follow.

REPORT OF THE DISTRICT AGENT, SEDGEWICK

SIR,—I submit herewith a report of my work as District agent of the Department of Agriculture at Sedgewick from April 1st to September 30th, 1916.

OFFICE.—Early in April an office was furnished and opened which served throughout the summer as a point from which to conduct the work and as a meeting place for those who desired information. A considerable number of farmers and teachers visited the office and obtained specific information on problems with which they were dealing.

FIELD WORK.—Two outbreaks of destructive insects were investigated and remedies suggested. Alleged and real attacks of grain rust were investigated. In most instances damage from rust was found to be slight, though in a few cases losses of from 10 per cent. to 40 per cent. were noted.

MEETINGS.—During the summer I attended five farmers' meetings in different parts of the district.

SCHOOL FAIRS.—Two School Fairs were held in the district, one at Sedgewick and the other at Argyle. At Sedgewick thirteen schools with 225 pupils participated in the Fair. At Argyle there were nine schools with 120 pupils. The Argyle Fair was held on September 8th; the attendance was four hundred. The Sedgewick Fair was held on September 19th; harvest being nearly over by this date the attendance was greater than at Argyle, being over seven hundred.

The methods followed were substantially the same at the two centres. The work might be roughly divided into three parts. First, came the visit to the school to explain the project, which was immediately followed by the distribution of sittings of eggs and garden seeds. Second, the pupils were visited at their homes while their crops were growing, for the purpose of inspecting or judging the plots. Finally, the pupils, usually accompanied by parents and teacher, brought the products of their summer's work to the central point where they were exhibited and judged. Prizes were awarded for the best kept gardens and the best exhibits. The keen interest taken in the work by pupils, teachers and parents was astonishing to those not familiar with School Fairs. Many parents expressed the conviction that it would be difficult to over-estimate the value to the children of the experience and information gained while engaged in the School Fair Work. A word of appreciation is due to Inspector Scott, without whose advice and assistance it would have been a matter of great difficulty to conduct the Fairs. The teachers of the various schools should also receive thanks for their generous assistance and co-operation.

In addition to the work mentioned above I judged the grain in the standing crop competitions at Sedgewick, Consort, Stettler and Camrose.

Respectfully submitted,

J. G. TAGGART,

District Agent.

REPORT OF THE DISTRICT AGENT, STONY PLAIN

SIR,—I beg to submit the report of the District Agent at Stony Plain, for the season of 1916, as follows:

Early in April I left Vermilion to become District Agent of the Department of Agriculture for Stony Plain. I secured office quarters in the front part of a hardware store and was supplied with furniture and

a Ford runabout. The main lines of work undertaken consisted of school fair work and cow-testing. Ten schools were visited and 312 pupils interested in home gardening. Two visits were made to each school during the latter part of April and the early part of May. On my first visit, I laid the scheme before the pupils and the teacher with the object of ascertaining the feelings of the school, getting a hearty response in every case. I also ascertained what seeds would be required and on my second visit delivered these seeds, giving instructions on how to plant them. All these seeds were supplied free by the department. Forty-five sittings of Barred Rock eggs were also distributed.

The kinds of garden truck grown included Wee McGregor potatoes, Chantenay carrots, Egyptian beets, Guernsey parsnips, Mammoth Long Red mangolds, Improved Purple Top turnips, Telephone peas and flowers (nasturtiums, sweet peas, alyssum and candytuft). Each boy was required to take potatoes and such other seeds as he chose and each girl flowers and such other seeds as she wished. The size of plots was confined to from four to eight rows, 34 inches apart and 25 feet long. All children were to make an exhibit of the garden products at the fair.

During the month of June and early in July, I inspected the gardens at the homes of the pupils and gave such instructions as were apparently needed. About the middle of August I began a second inspection with the object of scoring the gardens.

The school fair was held in a large tent at the Demonstration Farm on September 14th. It was primarily an exhibition of the poultry and the products of the garden, but it included also school work, sewing, cooking, pail-fed calves, colts and grains. To accommodate the exhibits, a tent 10x80 ft. was pitched. The large tent was filled to overflowing with exhibits comprising in the neighborhood of 1,400 entries. The attendance at the fair was approximately 500.

The second important phase of my work was milk-testing. The farmers were induced to weigh the milk of individual cows and I agreed to make tests of the milk of each cow for butter fat and to report the same. The milk of 70 cows was weighed for periods varying in length from one to five months and samples tested at intervals.

The Stony Plain District is admirably adapted to growing potatoes and I endeavored to continue some experimental work with varieties of potatoes which had been started previously by other officials of the department. Five farmers were interested in this work.

I also distributed among four farmers small quantities of Western Rye grass, Kentucky Blue grass, Timothy and Alsike clover. These farmers in nearly every case had a good "catch."

For three weeks during the latter part of July and the first part of August, I lectured on the Demonstration Train and at the Short Course at Vermilion.

I regret that owing to an accident on September 1st, I was compelled to relinquish my duties, practically for the rest of the season. I am deeply indebted to officials of the department for looking after the work in my absence and particularly to Mr. E. S. Hopkins, of the Vermilion School of Agriculture, to whom the success of the school fair was largely due.

Respectfully submitted,

H. H. MCINTYRE,
District Agent.



CHAMPION AND RESERVE GELDINGS AT CHICAGO INTERNATIONAL, 1916
GREY GELDING OWNED IN CANADA

REPORT OF THE PROVINCIAL VETERINARIAN

SIR,—I have the honour to submit herewith the annual report of the Provincial Veterinarian's Branch of the department for the year 1916.

The work of this branch consists of practical education, assisting the farmers and ranchers throughout the province in the prevention and eradication of those diseases which do not come under the Dominion Government's jurisdiction, and directing the care and guarding the health of the live stock kept on the different Demonstration Farms in the province.

EDUCATIONAL WORK.

(1) *Agricultural Schools*.—At the three Schools of Agriculture in the province, lectures are given on Veterinary Science during the school term, which runs from about November 1st to March 27th each year. In these lectures it is the aim to give the students a good practical knowledge of handling and caring for the live stock on the farm, a knowledge of the symptoms of the different diseases which affect live stock, more especially those which are most common in Alberta, so that they will be able to discern such diseases and affect cures, or stop contagion.

(2) *University of Alberta*.—Lectures are given to the agricultural students in this institution, the work given being more advanced than that which is covered in the Provincial Schools of Agriculture.

(3) *Institute Meetings*.—From time to time throughout the year meetings have been held at points in the province where it is difficult to obtain the services of a qualified veterinary surgeon, with a view to aiding as much as possible the farmers and ranchers in these outlying districts.

(4) *Short Course Schools and Demonstration Trains*.—It is also a part of the work of the Veterinary Branch to give lectures and practical demonstrations in the Short Course schools and Demonstration Trains.

LIVE STOCK DISEASES IN THE PROVINCE.

During the past year this branch has received and attended to a large number of requests from parties who live in outlying districts in the province for assistance in the diagnosing and treating of diseases where the cost of procuring the services of a qualified veterinary surgeon is prohibitive.

There is a good deal of misunderstanding throughout the province in regard to the jurisdiction of the Dominion and Provincial departments respecting contagious diseases, such as glanders, tuberculosis, hog cholera, rabies, dourine and mange. These diseases come under the Dominion Animal Contagious Diseases Act and are therefore looked after by the Live Stock Branch of the Department of Agriculture of the Dominion Government.

SOME OF THE MOST PREVALENT DISEASES OF LIVE STOCK IN THIS PROVINCE.

This branch has found that the following diseases seem to occur most frequently among the live stock of the province, and by enumerating

them and giving the causes and symptoms in each case I hope to draw the attention of the stockmen to them, and thus to prevent their occurrence to a great extent.

IN THE HORSE.

(1) *Foot Rot*.—This disease is the cause of considerable loss among horses throughout the province. It appears and disappears very suddenly, due, some authorities say, to climatic conditions. It occurs most frequently in the spring, but it may be seen at any time. Some claim that it is caused by a germ, others that it is caused by a chemical; all are agreed, however, that it produces a septicæmia extremely difficult to overcome. The symptoms vary to a great extent. In one case the animal may be affected completely around the coronary band, while in another, the spot might easily be covered with a twenty-five cent coin. In some instances these spots are only superficial, in others they affect the deeper structures, tendons, ligaments, blood-vessels and nerves. Frequently the hoof will drop off, and in some cases the whole foot will come away. Following is a brief synopsis of the peculiarities of this disease:

1. Mysterious pain at the commencement of the trouble around the hoof head.
2. Sloughing of the skin, either superficial or deep, between the fetlock and the coronary band.
3. Rapid debilitation of the animal affected.

Unless taken in the very early stages, the treatment of this disease has not been successful up to the present time, and once it gains a stronghold the animal is fortunate to recover. Those that do survive are, as a rule, blemished in some manner.

(2) *Swamp Fever*.—This disease seems to have disappeared to a great extent but occasionally reports come in from isolated districts. No treatment has been discovered for this disease as yet and usually the animal affected succumbs. Very often the symptoms of this disease and of typhoid are very similar, but in the case of typhoid it will respond very readily to medicinal remedies, while in swamp fever no treatment avails.

(3) *Typhoid Fever*.—During the year just past there have been no epizootic forms of this disease that I am aware of, but there have been a few isolated cases reported. I am of the opinion that the reason there have not been more cases is that in the more settled districts the farmers and stockmen are now giving more attention to the sanitation and ventilation of their premises. It has been proven by experience that animals which receive an insufficient supply of food and those which are forced to breathe bad air continuously are far more susceptible to the disease than those which are better kept. This disease, under certain conditions, is very contagious, and where large numbers of horses are crowded together in a stable, the whole lot may become affected. The symptoms vary considerably in intensity and form, depending on and governed by the organs, or set of organs, most severely affected.

(4) *Infectious Abortion*.—Very often this disease is introduced by bringing a strange animal into a herd which has just left a herd that has been affected. There is no absolutely sure cure for this disease, but by careful isolation of the animal affected and thorough disinfection of the premises, it can be reduced to a great extent. In a number of cases, there is no doubt that the infection is carried by harness and clothing, and frequently by geldings and stallions. This trouble may be looked for at any time in districts where the horse-breeding industry is carried on extensively.

IN CATTLE.

(1) *Blackleg*.—From the reports coming in to this office it would appear that this disease is becoming more prevalent each year. This may partly be accounted for by the fact that as cattle become more improved in breeding, they also become more susceptible to blackleg bacillus. We find also that it has been the practice among some of the ranchers in the province to brand, castrate, and in some cases dehorn at the same time they vaccinate against blackleg. Animals having undergone the above operation, or which in any way are wounded or bruised, will often develop the disease from material so attenuated or weakened that it would not affect them if they were in a normal condition. It is for this reason that it is dangerous to vaccinate, castrate, and mark at the same time. We have been advocating preventive inoculation at every opportunity, but unfortunately many neglect to vaccinate until an outbreak occurs. From carefully gathered statistics we find that in this province the most susceptible age for cattle to contract the disease is between six and eighteen months and it is unusual for animals over two years of age to become affected except in very virulent outbreaks. We also find that pure bred or high grade stock are affected earlier than low grade range cattle. This being the case, the safest method with well bred stock is to vaccinate at the age of three to four months and revaccinate six months later. One should observe, however, that should his calves become susceptible to blackleg earlier than three months, he should vaccinate accordingly. The objection to vaccinating calves under three months is that usually they are not susceptible to the disease at that time, consequently the vaccine does not "take," the animal is not protected and becoming susceptible later, may contract the disease. We would also bring to the attention of the farmers the necessity of carefully cremating the carcasses of animals dying from the disease. Many of our worst outbreaks occur from the virus being carried by dogs, coyotes, birds and often no doubt by the farmers themselves on their boots and clothing.

(2) *Contagious Abortion*.—This disease is gradually spreading throughout the country. In economic importance it is second only to blackleg and may, before long, attain first place. Formerly confined almost entirely to dairy cows, it has now spread to beef herds upon the range where the losses are proving especially severe. It is imperative that the stockmen as well as dairymen, awake to the seriousness of the situation and combine for a systematic campaign against the disease.

How Abortion is Spread.—All authorities do not agree as to the avenues of infection, but nearly all admit that the disease is spread by the bull at time of service, or through the digestive tract by means

of contaminated feed and water. The germs are very numerous in the discharge from the genital organs of affected cows. Consequently the disease is spread throughout the herd by this material coming in contact with the feed and no doubt in many cases contaminating the pastures. Moreover, abortion is often conveyed from herd to herd by the introduction of a diseased cow which then infects the bull, or a bull from a diseased herd is purchased and he in turn infects the cows. In small herds where bulls are kept for service, the disease may be disseminated throughout the community unless suitable precautions are taken.

Prevention.—For some considerable time drugs, such as carbolic acid, methylene blue and other substances have been said to be specifics, but have been gradually discarded as ineffective, until at the present time the standard antiseptics are proving more reliable and cheaper. Each cow showing the disease should be isolated; she should be systematically treated with mild antiseptic douches; the premises should be cleaned, disinfected thoroughly and kept in a sanitary condition.

Ventilation and Sanitation.—It is well known that dark, damp, poorly ventilated stables in which filth, dust and litter have been allowed to accumulate, harbor and transmit the germs of contagious disease. On the other hand, stables so constructed that dirt can not accumulate, that are well drained, ventilated and lighted seldom act as a breeding-place for disease.

The following is suggested as a means in controlling disease:

1. The removal by thorough sweeping of cobwebs and dust from the ceiling, side walls, stalls, partitions and floors.

2. If the floor is of earth it should be removed to a depth of four inches. All earth removed should be replaced with earth from an uncontaminated source, or with a new floor made of concrete.

3. The interior of the stable, especially the feeding troughs and drains, as well as milking stools and other implements, should be saturated with a disinfectant, as carbolic acid, 6 ounces to every gallon of water. After this has dried on the stalls, walls and ceiling may be covered with whitewash.

4. All material from the stable and barnyard should be removed to a place not accessible to other animals. The manure should be spread on the fields and turned under; the yards should be disinfected by sprinkling liberally with a solution of copper sulphate 5 ounces to a gallon of water.

5. It is also important that arrangements be made for plenty of sunlight and fresh air, also good drainage is very necessary.

SHEEP.

The sheep in the province seem to be particularly free from disease and the only thing that we have to contend with is weed poisoning, which is treated in the latter part of my Report.

SWINE.

As in the case of the sheep of the province, the swine are very free from disease. We have run across a few diseases such as pneumonia, bronchitis, pleurisy and rheumatism, but if the animals are kept under sanitary conditions there should be no trouble from these diseases. There have also been a few cases reported which have been brought about by mistakes in feeding, such as gastritis, chronic indigestion and poisoning by the various forms of chemical irritants carried in with the food. There are also a few cases of hog cholera reported to this office from time to time, but as this is a contagious disease it comes under the jurisdiction of the Dominion Government.

WEED POISONING.

The subject of poisonous plants is becoming a very live issue among the stockmen of this province. Numerous requests were received by telegrams and letters to visit cases of weed poisoning and we endeavoured to see as many cases as possible and thus be able to note the symptoms of poisoning and the special circumstances of each case. In some cases it was impossible to reach the locality in time to observe the early symptoms, but in the majority of cases the conditions of the poisoning were studied in the field at first hand.

It is estimated that there is more loss in live stock from this source than possibly any other, and we believe that could the stockmen become acquainted with the different poisonous plants growing in their particular districts, it would assist in reducing that loss to a very considerable extent. Up to the present time it has been extremely difficult for those interested in the cattle, sheep and horse industry to secure literature dealing with this subject. This can be attributed to the fact that the study of plant poisoning is now only in its experimental stage and up to the present little or nothing was known about it.

The different symptoms produced by each particular toxin is confusing and it is extremely hard to come to a conclusive diagnosis. If it were possible to try out the feeding of stated quantities of the various poisonous plants at different stages of their development, carefully noting the symptoms resulting from this feeding, considerably more might be done. We find, however, in the experiments already made that, like chemical poisons, each poisonous plant has its own peculiar action. Some affect the nervous system, others the voluntary muscles, some the brain, while perhaps the digestive apparatus is the only organ involved. One should also bear in mind in the study of plant poisoning that the months of April, May and June are really the dangerous periods and stock often seeking shelter from late snows, or long continuous rains, are apt at the cessation of these to be hungry and less particular as to the kind of forage eaten. The first green shoots of the Water Hemlock, Larkspur and Death Camas appearing in early spring are believed to be much more poisonous than when matured and flowering. Certainly they are much more tempting and palatable while young, which no doubt accounts for the many deaths occurring during this period. We believe that in Alberta there are a considerable number of plants with which we are unfamiliar, which at certain periods of their growth produce poisonous effects on live

stock, but the ones most commonly met with and producing greater loss than any others are the Water Hemlock, Larkspur and Death Camas. These plants are found more frequently in certain sections of the province. They are also more commonly met with in certain seasons of the year and there is no doubt that they produce greater loss some years than others. It would be impossible to name each individual district affected with these poisonous plants, but we find the Water Hemlock and the Larkspur more generally distributed throughout the northern part of the province and the foot hills of the Rocky Mountains. The Death Camas, we believe, is confined almost strictly to certain localities in the south towards the Montana boundary. Isolated cases may be found in other sections of the country farther north, but up to the present time no complaints of poisoning by this plant have been reported in Northern Alberta. In bringing out this Report, the object is to present to those interested in the preservation of our live stock as much data as possible relating to this work, in the hope that by becoming proficient in recognizing the various poisonous plants, some assistance can be given in the extermination of them.

The treatment, or antidotes, in plant poisoning will be in many cases disappointing until such time as a more definite knowledge of the toxin of these plants is known. Then only can we expect to find something to counteract the toxemia produced by these poisons.

Influence of Heavy Rainstorms.—We have observed that during the spring months poisoning is apt to occur after heavy rains. The explanation offered for this fact is that certain plants may be more poisonous when wet with rain or dew than under other conditions. Also it is frequently suggested that stock when feeding immediately after heavy rainstorms are more apt to pull up the roots of plants than when the range is dry. It is well known that in the case of many poisonous plants the active principle is located in the roots and that large quantities of the leaves and stems would have to be eaten in order to cause serious poisoning. It is also possible that storms accompanied by winds may beat down the weeds and grass together so that stock will not distinguish between them so readily as under dry conditions. Cattle and horses often suffer from poisons after late snowstorms, and especially from the larkspur (*Delphinium glaucum*). This plant is greedily eaten by cattle, largely perhaps for the reason that nothing else is to be obtained without digging under the snow. Continuous rains or snowstorms also cause stock to seek shelter, from which they come forth hungry and use less selection in their choice of forage and in consequence suffer from poison. Serious cases of poisoning among sheep have occurred while the bands were being driven from one locality to another. This may be attributed to the fact that sheep cannot make the same choice of forage while being hurried over the range as they can under conditions of rest. The condition of the stomach, whether full or empty, no doubt plays an important part in the poisoning of sheep and cattle. Eating whatever is in sight and as rapidly as possible, they are liable to consume large quantities of plants of kinds which when taken in small quantities are not harmful, but which in large amounts may produce serious disturbances.

Following is a list of the poisonous plants which are found to be most dangerous in this province, together with a few notes in each case.

Death Camas.—Of all the various plants which are known to poison stock the Death Camas is probably the worst. This plant is found mostly in the southern part of the province and where found usually grows in great abundance. Its habitat is, as a rule, in moderately moist places and it generally springs up earlier than the native grasses. It resembles closely grass leaves, though slightly thicker and more succulent. It is more often found in coulees, on the sides of the foothills and frequently on high bench lands. As stated, it grows in great abundance in certain localities and it is therefore an easy matter for a large number of sheep to become poisoned in a short time. Why sheep are the only animals to be affected by this plant, I am unable to say, but cattle and horses seem to be immune from its effects.

The symptoms are remarkably uniform and any sheep-raiser noting the following symptoms should not fail to recognize the case of poisoning by Death Camas. The first thing noticed will probably be uneasiness and irregularity in the movements of the sheep, these indications rapidly increasing accompanied by spasms and rapid breathing until the animal passes into a state of motor paralysis with a frequent weak pulse. The duration of these stages of poisoning depends entirely upon the amount of Death Camas eaten. Where large quantities have been consumed the symptoms follow in quick succession and death results in from one to three hours.

The popular remedy for poisoning by Death Camas is bleeding in the extremities, usually at the mouth or tail, and has been found effective in the early stages of the poison. A remedy that has come into considerable repute of recent years is the administration of equal parts of potassium and aluminum sulphate. A teaspoonful of the mixture dissolved in water is enough for about 12 sheep.

Water Hemlock.—This plant is widely distributed throughout Alberta. It is allied to the cultivated parsnip and resembles it to some extent. Its ordinary habitat is along the banks of streams and irrigation ditches, on wet railroad embankments and in swamps and meadows. The number of cattle poisoned by water hemlock is very considerable. It is to be feared mostly between the time it starts to sprout in the early spring up until it starts flowering, which is usually about the end of June. During that period it offers an abundance of tempting fodder to live stock and is especially dangerous in a season in which the grass is backward.

This plant, as already stated, grows in wet places and except where the grass has formed a tough sod its roots may be easily pulled up with the stem. From data gathered it would indicate that the leaves and stems, including the basal portion, at least during the early stages of growth, contain sufficient poison to produce death. The roots contain a virulent poison and several cases have been reported of horses becoming poisoned from eating hay cut in meadows containing the root of the water hemlock.

The symptoms of this plant poisoning depend a great deal upon the quantity eaten. There is usually profuse salivation, frothing at the nose and mouth and excessive urination. There are well marked convulsions with trembling and twitching of the muscles. This is usually followed by coma until death takes place.

Up to the present time the treatment has not been satisfactory. In some cases beneficial results have been obtained from large doses of raw linseed oil, melted lard and milk.

Larkspur.—This poisonous plant has a rather wide distribution in the province. Its preferred habitat seems to be rich and moderately moist, half-shaded localities, especially among underbrush and along streams. There is some difference in the appearance of the plant, depending on the altitude in which it is found. That found in the foothills is much smaller and the flowers a much deeper blue than those in the lower plains.

All, or nearly all, cases of poisoning from this plant in Alberta have been among cattle. In this province the leaves of the plant become conspicuous about the last of April and the flower begins to open about the middle of June. Often late snows occur and when there is no other verdure in sight the uncovered portion of the Larkspur is in a high degree tempting to stock, all the more because it is succulent. The danger of this plant is increased by the fact that at the time of snow falls cattle seek shelter where the Larkspur is more abundant and more advanced in growth. From our experience we find it should be regarded as dangerous from May until the middle of June and it is strongly suggested that during this period cattle be kept away from the regions where the plant abounds.

Although many cattle are undoubtedly killed by eating this species of larkspur, there are few cases reported of such poisoning. The reason of this no doubt lies in the fact that cattle, unlike sheep, being left to the care of themselves, are more frequently found dead than alive and hence we are unable to collect the symptoms cattle mainly are affected with. Sheep are rarely affected with larkspur poisoning. Frequently bloating is the only indication of the trouble and the animal may or may not exhibit any other symptoms of the poison. When considerable quantities of the plant are eaten the animal shows stiffness in the legs and has difficulty in walking. There is spasmodic twitching of the muscles and convulsions in the final stages. As in the case of Death Camas there is reduced pulse and breathing ending in convulsions and death.

The popular treatment is bleeding at the extremities and the administration of melted lard, bacon grease or oil. In cases where bloating is the only symptom the animal should be punctured with a trocar and cannula to allow the accumulation of gas a chance to escape.

Loco Weed.—For a considerable number of years a disease called "Loco" affecting cattle, horses and sheep has been widely known to the stockmen of Southern Alberta. The disease has most commonly been attributed to the action of certain plants, several species of which have been suspected of producing the Loco condition in animals and have been called Loco Plants or Loco Weeds, and also Crazy Weeds from the nature of the symptoms produced. Fortunately nearly all these species of plants are restricted to the foot hills of the Rocky Mountains, and especially to that locality known as the Porcupine Hills. From reliable observations on the subject of Loco disease, it would indicate that it is the result of eating undue quantities of certain weeds of which a number are known.

The disease may assume either an active or chronic form. In the active form, the animal lives but a few days, while in the chronic form, which is the one most commonly met with, it may live for two or more years and manifest the same symptoms in a milder degree.

The horses and the sheep are the animals most frequently affected. Cattle occasionally acquire the "Loco Habit" but the cases are exceptional. From a careful study of the Loco Weed we find that horses, cattle and sheep eat this plant with great readiness, particularly if they come across it at a time when grass is somewhat scarce. Several of the different species of the plant are green during the winter, when all grass on the hills is dry and brown. These plants, being quite prominent, induce an animal to try them, and because of their succulent character and agreeable taste, it may continue to eat them. During the spring months before the grass starts, where the Loco is abundant, practically all animals eat more or less of it. As the grass comes on, many leave the Loco plant and devote themselves entirely to grass, while others acquire a taste for the plant and an appetite which is not easily overcome, and they will continue to eat the Loco Weed even where there is abundance of other feed.

Some cases are noticed where both horses and cattle will eat Loco Weed for a considerable length of time and suffer no harm, while others which acquire the habit of eating the plant almost exclusively, may linger along for several months but more frequently die within a few weeks. Sheep also are poisoned in much the same way. The effect of the poisoning seems to be especially noticeable in lambs.

It is also noticed that there is considerable difference in the readiness with which various breeds of animals will eat Loco Weed. Native bred horses are very much less likely to be locoed than imported animals. Finer breeds of animals are more likely to become locoed than the poorer breeds.

We have not had an opportunity of carrying out very much experimental work relating to this plant, but the results obtained from the present investigations have proved very contradictory.

Respectfully submitted,

P. R. TALBOT,
Provincial Veterinarian.



RANGE SHEEP.



BROOD MARES IN ALBERTA RANGE.

LIVE STOCK COMMISSIONER'S REPORT FOR THE YEAR 1916

Live stock conditions in Alberta during the year 1916 were, taken as a whole, very good. There were no serious epidemics among any class of stock. Prices have been good throughout the year, and in the case of some classes record prices have been obtained. High prices for grain caused farmers for a time to reduce their efforts along some lines, but by the close of the year their error in this respect began to be apparent, and there was developed a very active demand for all classes of live stock.

HORSES.

There was a keen demand for Alberta horses throughout the year. The leading buyers were dealers and farmers from the province of Saskatchewan. There were few purchases of army horses made. New York dealers who had contracted to supply army horses to the French Government visited the province in the month of August but met with little success, owing in part to the low prices they were offering and in part to the fact that they were asking for a taller horse at a given weight than is being raised here. Most of the animals raised here are from draught sires, and therefore are better suited to agricultural work than to cavalry purposes.

STALLION ENROLMENT.

There were enrolled during the year 237 pure bred and 209 grade stallions. The pure breeds are classified as follows:

Clydesdale	112
Percheron	81
Shire	7
Suffolk	8
Belgian	9
Thoroughbred	3
Standardbred	13
Hackney	4

CATTLE.

Interest in the cattle industry continues strong. The stock inspection returns show a larger number of stocker cattle shipped from the central markets back to the farms than during any preceding year.

The number of animals sold and the prices realized for pure bred bulls at the various bull sales are also indications of the keen interest that has developed in the cattle industry. Association sales were held at the following places: Castor, Edmonton, Calgary, and Lacombe.

SALE AT CASTOR.

This sale was held on March 29th and 30th, by the Live Stock Association of that place. Following is a statement of the animals sold and the prices obtained:

<i>Number Sold</i>	<i>Average Price</i>
10 Shorthorns	\$170.00
8 Herefords	88.75
3 Aberdeen Angus	115.00

SALE AT EDMONTON.

This sale was held on April 6th, by the Edmonton Exhibition Association. Following is a statement of the animals sold and the average price secured:

<i>Number Sold</i>	<i>Average Price</i>
50 Shorthorns	\$155.80
4 Hereford	152.50
7 Aberdeen Angus	122.85
3 Holsteins	81.70
1 Ayrshire	75.00
1 Jersey	75.00
8 Red Polled	87.00

SALE AT CALGARY.

This sale was held on April 10th, 11th and 12th, by the Alberta Live Stock Associations. Following is a statement of the animals sold and the average price secured:

<i>Number Sold</i>	<i>Average Price</i>
187 Shorthorns	\$221.06
82 Herefords	310.06
34 Aberdeen Angus	175.73
1 Galloway	105.00

SALE AT LACOMBE.

This sale was held on May 31st, by the Alberta Live Stock Association. Following is a statement of the animals sold and the average price secured:

<i>Number Sold</i>	<i>Average Price</i>
13 Herefords	\$216.92
85 Shorthorns	158.64
16 Aberdeen Angus	154.37

As regards the movement of stock in this province I beg to submit the following data:

Shipments from points other than Calgary and Edmonton to points within the province numbered	26,794
Shipments from Calgary and Edmonton, which consisted chiefly of animals received from country points	38,395
Of these the number shipped back to the country was	31,621
And the number exported was	6,774
The number of animals slaughtered within the province, as indicated by the reports from butchers and hide dealers, was as follows:	
Total Hides	87,519

Classified as follows:

Horse Hides	398
Beef Hides	87,121

Beef Hides are classified as follows:

Animals slaughtered at Calgary	9,235
Of these, the number of mature males was	6,829
Number of mature females	2,219
Number of calves, both sexes	187
Animals slaughtered at Edmonton	24,593
Of these, the number of mature males was	17,452
Number of mature females	6,134
Number of calves, both sexes	1,007

Animals slaughtered at points other than Calgary and Edmonton....	53,293
Of these, the number of mature males was	22,896
Number of mature females	23,634
Number of calves, both sexes	6,763

SHEEP.

Interest in the sheep industry is still on the increase. The high prices that have prevailed for wool and mutton account for much of this. Good fleeces of medium clothing wool netted the growers from 28c to 35c per pound, according to the size of the consignment and the manner in which the wool was put up.

The wool-growers of the province have almost ceased to use binder twine for tying up fleeces, and their product is much more in demand because of that fact.

The year 1916 marked the advent into Alberta of the Australian system of shearing, sorting and baling wool. The pioneer in this movement is Mr. R. C. Harvey, of Lethbridge, formerly of Raymond. Mr. Harvey's plant is situated near Chin Lakes, about twenty miles east of Lethbridge. It consists of a metal-covered building, in which is installed a gasoline engine and six machine clippers. By the use of this equipment six men are able to shear on the average twelve hundred sheep per day. Whether or not this system will be generally adopted by the wool-growers of the province, remains to be seen. From a humane standpoint it is decidedly superior to the "blades."

The weight of the subsequent fleeces and the percentage of loss during the first two weeks following shearing will have much to do with deciding whether or not machine shearing will become general in Alberta. The advocates of the "blade system" contend that the machines cut too close to the skin and leave too little protection on the animal. Then if the weather turns hot the animals become sun-scalded and the growth of the subsequent fleeces is retarded. If the weather turns wet the animals are chilled, sometimes to the extent that many of them perish.

Mutton prices have ranged high throughout the year. The quotations issued by the commission firms operating at the Alberta Stock Yards, Calgary, were as follows:

1916.

*Average Price per Cwt. **

	Mutton	Lamb
January	\$ 8.56	\$ 8.50
February	8.75	8.50
March	8.95	9.60
April	9.00	10.00
May	9.50	10.00
June	9.20	10.20
July	8.68	10.00
August	8.31	9.31
September	8.50	9.30
October	8.75	9.75
November	9.31	10.25
December	10.50	11.12½



FARM FLOCK.



RANGE FLOCK IN WINTER QUARTERS.

SWINE.

As in 1915, interest in swine-growing was reduced by the high prices ruling for grain. The severity of the weather during January and a part of February was followed, as is usual in such seasons, by a high rate of mortality in the pigs farrowed in March and April.

The number of hogs in the province in the year 1916 as given by the Provincial Statistician is 440,310. By far the greater number have been marketed at light weights and in a poorly finished condition. In fact, for a time, so large a number of animals weighing between 100 pounds and 125 pounds were being offered for slaughter that the packers were at a loss to know what to do with them, as they are unsuited for our domestic trade, and the foreign demand would not justify paying the prices ruling for finished stuff. A dockage of three cents per pound was therefore imposed for a time on animals of this class. This, together with a decline in the price of feed grain which set in at about the same time, resulted in a considerable improvement in this respect.

The price of hogs ranged as follows during the year 1916:

	Average Top Price.
January	\$ 8.95
February	9.38
March	9.77
April	10.79
May	10.80
June	9.93
July	10.62
August	11.37
September	11.00
October	10.15
November	10.30
December	11.39

GOATS.

An event of the year 1916 that promises to lead to important results in the live stock industry of the province is the establishing, in the foot hills west of Macleod, of the milking goat industry. The founder of the industry is Mr. William Schroeder. He milked during the summer months upwards of two hundred goats. The produce was manufactured chiefly into cheese and found ready sale, particularly in Calgary and, to some extent, in Edmonton.

COMPETITIVE LIVE STOCK MARKET IN EDMONTON.

Another event of the year is the opening in Edmonton of a competitive live stock market. This market has done much during the few months of its existence to facilitate purchasing by eastern buyers and to bring live stock prices to a parity with those paid in other markets.

SUNLIGHT AND ANIMAL VIGOR.

An important subject upon which there is at present little definite information, is the influence of the sun's rays on the animal kingdom and the extent to which sunlight aids in imparting health and strength to the lower animals and to human beings.

The difference in the texture, elasticity and toughness of plants grown in complete darkness, in the shade and in the open sun, has long been noted, yet few have been sufficiently influenced by this phenomenon to ascertain whether or not similar differences result among animals that are kept under like conditions.

It has also been noted that in the treatment of disease sunlight plays a very important part. But we are accustomed to thinking and speaking of it merely from the standpoint of its known power for destroying bacteria. We have not yet become accustomed to thinking of it from the standpoint of its energizing effects, and of associating it with the food we eat as being the source of life and strength.

There is need at the present time for definite information along this line because there is reason for believing that some of our difficulties in connection with the growing of live stock are the result of a lack of knowledge on this point. The difficulties to which reference is made are goitre among new-born calves and lambs, and an absence of hair on new-born pigs, especially on those farrowed during the winter months or early in the spring. There are losses of this kind in Alberta every year; some years they are serious. In the year 1916 they were especially so, besides being spread over a wider area than usual. It is said that for the first time in the history of the United States serious losses of this nature were sustained in the spring of 1916, in the northern portion of that country. In the State of Montana alone it is reported that the losses amounted to about one million head. The federal government of the United States sent a staff of experts into the affected area to inquire into the matter and ascertain the cause of the difficulty, if possible. The only organ found to be defective, in the hundreds of animals examined, was the thyroid gland. This fact would suggest that pigs being born without hair, and calves and lambs being born with goitre might result from a common cause, and that these ailments in the animals named may spring from causes kindred to those of goitre and cretinism in human beings.

The regions in which cases of goitre and cretinism in human beings most frequently occur are the valleys of the Alps, the Himalayas, the Andes and, to a lesser extent, the Rockies; and the parts of these mountainous districts in which the inhabitants are most seriously affected are those valleys which have but one outlet and which are exposed to the sun's rays but a few hours each day. The conditions which naturally result from such an environment and which, in the opinion of medical authorities, tend to produce these abnormal developments, are insufficient sunlight, stagnant air, cold—especially when combined with dampness, the use of water that is deficient in oxygen, such as snow-water or water that has been in contact with minerals which possess a strong affinity for oxygen, likewise water that is impregnated with lime salts.

Many of the conditions above named are to be found even on the prairie farms of this province during the winter months. At this time of year the days are short and the sun's rays feeble, so feeble in fact that even on a bright day instantaneous photographing is rendered difficult. Poorly ventilated stables are the rule on most of our farms, and stagnant air is the result. In addition to this the walls of most of our buildings in



CHOICE BUNCH OF PERCHERONS, PROPERTY OF GEO. LANE

which farm animals are housed during the winter are lined with f during a large part of that season, thus giving the condition of damp and cold. The practice of requiring brood sows to slake their thirst eating snow is also very common, and where this is done the condition supplying water deficient in oxygen is present.

It is a matter of common observation that the rate of morta among late farrowed pigs and among calves and lambs is m lower than among earlier ones. The explanation usually given accepted is that this phenomenon is due to the fact that during w weather the dams get more exercise and secure food more keeping with normal requirements than is the case during winter months. There is no doubt that lack of exercise improper feeding have been the cause of much of the difficulty, that there were other forces contributing to the same end has long b apparent to those who have been endeavoring to fathom the myste connected with it. The conditions mentioned above may or may constitute a part of these unknown forces. Research, supplemented experimentation, alone will determine this fact. The importance arriving at definite and well founded conclusions on this subject beca of the seriousness of the losses annually sustained by our swine-grow will amply justify whatever effort and expenditure may be necessary this end.

STRAY AND ENTIRE ANIMALS

Amount collected from the sale of stray and entire animals during the year 1916	\$7,47
Amount refunded during the year 1916	53

POUND DISTRICTS

There were six pound districts organized during the year 1916, follows:

Township	Range	
23	9	West of the 4th M.
53 & 54	26	" " "
15 & 16	1 & 2	" " "
30	24	" " "
24	6	" " "
21	7	" " "

REPORT OF THE DAIRY COMMISSIONER

SIR,—I have the honour to submit herewith the report of the Dairy Commissioner's Branch for the year ending December 31st, 1916, under the following heads:

- I.—General.
- II.—Creameries and Cheese Factories.
- III.—Marketing of Creamery Butter and Eggs.
- IV.—Grading of Cream and Creamery Butter.
- V.—Educational Butter-scoring Contest.
- VI.—Dairy Instruction Work.
- VII.—Acknowledgments.

I.—GENERAL.

The dairy industry is making substantial progress. A few statistics are given in the following pages, more particularly in connection with the factory production.

Through the system of the grading and marketing of cream and creamery butter now in vogue in the province, the dairyman who is within reach of a well managed creamery may now place himself in practically direct contact with the best and most profitable markets. He need no longer hesitate to increase his production of milk and cream so long as the quality be right. There will be no over-production of high grade products, the markets of the world are reaching out for them.

A record is submitted in the following pages of the principal activities of the Dairy Branch of the Department in relation to the general industry and to the market.

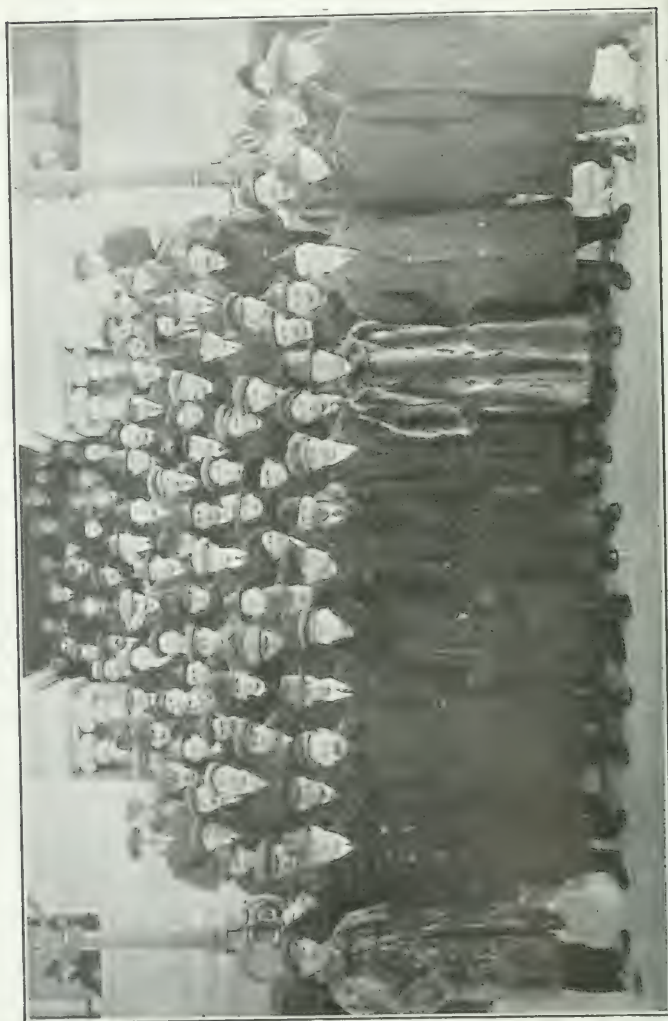
CREAMERY BUTTER PRODUCTION.

Following are the number of creameries operated in the province, the butter output in pounds and the annual increase in production for the past six years. The selling value of the butter at the creameries is given for 1916, the average price being 30.73 cents per pound.

Year	No. of Creameries	Butter Output Pounds	Annual Increase Per Cent.	Selling Value at Creameries
1911	56	2,540,000	.....
1912	53	3,050,000	20.08	
1913	49	4,115,000	34.92	
1914	44	5,444,806	32.31	
1915	57	7,376,871	35.48	
1916	57	8,521,784	15.52	\$2,619,248.14

It will be noted that notwithstanding the backward spring, the shortage of suitable labor on many farms and the high cost of grain feed the production for 1916 was well over a million pounds greater than that of 1915, representing a very substantial increase of 15.52 per cent. This is to show that the dairy business is not being neglected.

The increase in production has been practically uniform throughout the dairy districts of the province, as shown by the following figures representing the relative percentage of the total creamery butter production North and South of Red Deer, during the past three years:



ANNUAL REPORT, 1916

Year	North Per Cent.	South Per Cent.	Total
1914	64.0	36.0	100.0
1915	57.4	42.6	100.0
1916	56.5	43.5	100.0

There are two outstanding features in connection with the past year's creamery business that deserve more than passing notice, namely, the adoption of the effective pasteurization of cream for buttermaking and the decentralization of the butter manufacture of the two largest creameries in the province. The pasteurization of cream is more fully dealt with under another heading.

The decentralization referred to was brought about by the establishment and operation of fully equipped branch creameries at various points to manufacture locally the cream that would otherwise have been shipped by rail to the central plant. In this process of readjustment several of the local creameries that had been temporarily closed, through stress of competition, were revived and again put into commission. The operation of the manufacturing plants close to the sources of cream supply will mean a material gain in the quality and, therefore, in the value of the manufactured product.

FACTORY CHEESE PRODUCTION.

We are again able to record a very substantial increase in the production of cheese. The sixteen factories that were operating during the season of 1916 reported a cheese output of 745,122 pounds for the calendar year as against the output of 372,693 pounds in thirteen factories during the twelve months ending October 31st, 1915. This increase of 100 per cent. has been due largely to the abnormally high cheese prices that prevailed throughout the year. The average selling price at factory was 20.73c as compared with 17.93c in 1915. The operators of some of the large city dairies and in the heavy milk producing districts of Didsbury, Olds, Red Deer and Wetaskiwin were able to handle in this way at comparatively high prices that portion of the milk supply which was available but not needed for direct consumption in the cities. As there is a large demand for good cheese in Western Canada it is to be hoped that when conditions become normal the cheese industry may still continue to grow and become a permanent and important factor in the development of the dairy business of the province.

It is of interest to note here that, according to their reports, nine of the cheese factories manufacturing 80 per cent. of the cheese paid for the milk on the basis of the Babcock Test. The remaining six factories bought their milk according to weight.

PASTEURIZATION OF CREAM FOR BUTTERMAKING.

At the Annual Dairy Convention held at Calgary in December, 1915, considerable prominence was given to the discussion of certain defects in the quality of some of our creamery butter, particularly its lack of keeping quality and to some extent the development of fishy flavor in storage. The butter production in 1915 had been considerably larger than that of any previous year and as the consumption of butter

had been somewhat curtailed owing to economic conditions a larger proportion of the summer butter had to be carried forward in cold storage for the autumn and winter trade. As a result of this combination of circumstances the lack of keeping quality in some of the butter had become particularly marked.

The reports of the produce merchants, who carried some of the butter in storage, were fully corroborated by the results of our re-scores of grading samples from several hundred churnings of summer butter handled through the Department's Grading Stations at Edmonton and Calgary in 1915. As a direct result of the gradual adoption of cream grading at the creameries considerable improvement had been made, year by year, in the quality of our butter and, on the whole, the product gave good satisfaction to the trade when it was put into quick consumption and even held in storage for a short time, but it had become very evident that something more had to be done—and quickly—to secure better keeping quality for our creamery butter so as to attain and maintain a satisfactory place in our Western markets, to say nothing of other markets, where it would come into direct competition with some of the finest butter made.

In the course of the discussion on the subject the experiments of several prominent investigators were quoted as showing that rapid deterioration in storage and the development of fishy flavor in butter seems to a large extent to be due to high acidity in the cream from which it was churned and that these defects may be overcome by the pasteurization and churning of sweet cream. Interesting and important as this finding was it did not hold out much comfort to the creamery operator and buttermaker who, by reason of local conditions, are obliged to receive and handle a considerable proportion of their cream supply in an advanced stage of acidity. Moreover, when Mr. Barr, the Chief of the Dairy Division, presented a statement of some cream pasteurizing experiments that had been conducted at one of the Dominion Dairy Stations, he related that in two cases the butter made from pasteurized cream developed fishy flavors in storage, whereas the butter from the corresponding churnings of raw cream did not. These results seemed to indicate that pasteurization of the cream even at a low acidity (under .2%) does not always prevent fishy flavors in the butter, although in the majority of the tests the pasteurized cream butter had showed a better keeping quality than the raw cream butter.

However, the term "pasteurization" is a more or less arbitrary one and a variety of effects are produced by different methods. For instance, the efficiency of the continuous high temperature method of pasteurizing sweet milk or cream had been amply demonstrated for the past twenty years; but I, for one, was not quite assured that the lower temperature "holder" method had been proved equally efficient, except, perhaps, from a purely bacteriological point of view.

By the continuous process of pasteurization at temperatures of 176° Fahr., or over, we can destroy the disease-producing germs and a very high percentage of other bacterial life (organized ferments) in the cream. We eliminate from the butterfat a large percentage of its free fatty acids and enzymes (unorganized ferments) which are undoubtedly responsible to a large extent for the deterioration of butter in storage.

By the "holder" method and using the temperatures that are generally advocated (140-145° Fahr. up to 30 minutes) we may equally effectively dispose of the micro-organisms and to a lesser degree eliminate free fatty acids from the butterfat, but at least some of the unorganized ferments will survive to carry out their function in the resulting butter.

Since a number of the creameries in the province were already equipped with disc or coil cream ripeners which could be made to do service as pasteurizers, I decided to gather as much information as I could with regard to the most effective use of the machines for that specific purpose. After considering the literature and experience that had come within my reach I felt that in order to secure the results we really wanted it would be necessary to use somewhat higher temperatures than were generally recommended, because the problem was to secure *the same efficiency* from the "holder" method as from the continuous or "flash" method with respect to the destruction of both bacteria and enzymes.

Availing ourselves of the hospitality of the Edmonton City Dairy and the Woodland Dairy of Edmonton, and the Calgary Central Creamery, Calgary, we were able to carry on a number of experiments during the winter of 1915-16 to secure some additional light upon the question. We found that it was quite practicable to heat a vat of cream to even 170° Fahr. and hold that temperature for 10 to 20 minutes without causing any injury to the quality of the butter made from it, even for immediate market, and the effects upon the keeping quality was very marked. I may add here that one experimental package of butter was held for more than eight months in cold storage and scored "Special" at the end of that time.

As a result of the experience we had gained from this experimental work the announcement was made prior to the beginning of the butter grading season that the department would issue "Special Grade" certificates only on butter that had been made from effectively pasteurized cream—giving a negative re-action for peroxidase by the Storch Test.

The operators of twenty-three creameries, manufacturing more than 80% of the total creamery butter output of the province, equipped themselves for the pasteurization of their cream. Twenty-two used the "holder" method and one the "continuous" type. They reported that they used the following combination of maximum temperatures and holding time:

1 Creamery	.....150° Fahr. for 20	minutes
1 Creamery	.....160° Fahr. for 12	minutes
13 Creameries	.....160° Fahr. for 20	minutes
4 Creameries	.....165° Fahr. for 10-15	minutes
1 Creamery	.....165° Fahr. for 25	minutes
2 Creameries	.....180° Fahr. for 10	minutes
1 Creamery	.....170°-190° Fahr. (continuous.)	

Generous commendation is due the operators who installed pasteurizing equipments in their creameries and used them so effectively during the season. This enterprise upon their part was profitable not only to themselves but to the whole dairy business of the province. I venture the opinion that the cash expenditure involved in the new installations was returned tenfold during the season in the added price

that was obtained for the butter. Further, the "lion's share" of that added price found its way into the pockets of the patrons of the creameries.

Very satisfactory reports have been received from a number of wholesale produce firms in both Eastern and Western Canada with reference to the splendid keeping quality of the butter that was made from properly pasteurized cream. The general adoption of pasteurization will place our dairy industry upon a practically new basis, more particularly in relation to the export trade.

ALBERTA CREAMERY BUTTER EXPORTED TO ENGLAND.

In November last a joint shipment of one carload of creamery butter was forwarded to Messrs. George Little, Limited, Manchester, England, from the Provinces of Manitoba, Saskatchewan and Alberta. The shipment was consolidated at Regina by Mr. W. A. Wilson, Dairy Commissioner for Saskatchewan, who had conducted the negotiations with the consignees in Manchester. A letter has been received from Mr. Wilson, enclosing a copy of their report on the shipment and I take the liberty of quoting it here:

"**QUALITY:** In reference to this we must congratulate you on all the butters, they were certainly the finest parcel of goods we have received from Canada, and if the three provinces maintain this quality, there is no doubt but what your butters will command very high prices on the British markets. It is very difficult to make any comparisons as commercially they were all excellent. The Alberta butters were packed rather better than those of Saskatchewan and Manitoba, the boxes being stronger and they were also bagged, which tends towards a better appearance, the other boxes being dirtied in transit. This, together with the quality being slightly superior, is the reason for the extra 2s. we were able to obtain. When putting up the butters in future for export, we should certainly recommend you to use a much stronger box, also to have the ends of same nailed instead of dovetailed, as the knocking about which the butter receives at the different points of trans-shipment bursts the dovetailing and the butter comes out between the joints. The salting was just right, the butters of Saskatchewan being rather heavier than the other two provinces, but still different parts of England require their butters salted differently and we have no trouble in moving same as long as they are not too heavy salted, viz., 3%."

At our request a small sample shipment was forwarded by Messrs. George Little, Limited, to Messrs. Pullin, Thomas & Slade, Bristol, and the following extract is given from the report that was received from the Managing Director of the firm:

"Same duly came to hand in excellent condition and we were immensely surprised at the high grade quality. We had no idea that your district had reached anything like this standard, as our previous experience has always been of rough dairy butter, mixed in color and very poor in flavour; in fact—only suitable at most times as a confectionery butter.

"This sample in our opinion is superior to anything we have bought east, as it is not only mild and excellent in texture, but lacks that Canadian twang which prevented the Dominion product from ever reaching quite the level of New Zealand.

"Your sample we think is quite equal to that from the Antipodes."

It is pleasing to note that the type of creamery butter that is now being manufactured in Alberta proved so satisfactory to the consignees in Great Britain, as it does on several markets in Canada, East as well as West.

In order that we might have a thoroughly representative shipment in the Alberta quota I secured and forwarded lots of from ten to twenty-five packages each from the following creameries: Calgary Central, Carlyle Dairy, Hays' Dairy, Edmonton City Dairy, the Woodland Dairy, Innisfail, Markerville, Elnora and Red Deer. The report of Messrs. George Little, Limited, bears testimony to the uniformity of the quality and grade of the butter forwarded, not only from each province, but also from the three provinces collectively.

It may be of interest to mention here that twenty years ago five tons of butter made at the Innisfail Government Creamery was exported to Great Britain by Prof. James W. Robertson, then Commissioner of Agriculture and Dairying for the Dominion. Innisfail creamery butter even in that early day was justly regarded as being of a quality second to none in the North-West Territories and the shipment in question realized a net price of 15.68 cents per pound at Innisfail. The butter that was shipped to Manchester and Bristol in November last represented also the best type and quality of the creamery butter made in the Western Provinces and brought a net price of slightly over 38 cents per pound. A striking contrast in market values then and now!

Referring to the subject of export of creamery butter, the following quotation from "The Trade Bulletin," dated February 25th, 1916, is interesting. This journal is published at Montreal, and is recognized as the chief organ of the produce trade in Canada:

"The situation in butter is quite different this season to what it was previously, as Alberta and Saskatchewan have taken the trade of the Middle West and the Coast completely away from us. Not only this, but these two provinces have commenced to push their dairy products right into what our shippers used to claim as their exclusive territory, having shipped between 4,000 and 5,000 packages this season between Toronto and Montreal, besides supplying their home trade and Vancouver. Alberta has gone still further and made her first export of extra creamery butter to Australia, which gave great satisfaction. The Middle West is coming to the fore in the dairying industry precisely as the Trade Bulletin has repeatedly predicted; but we must say the feat is being performed much sooner than we ever anticipated. We venture the prediction that it will not be long before the two provinces of the North-West will be competitors with New Zealand and Australia in the English market."

ALBERTA CREAMERY BUTTER AT CANADIAN EXHIBITIONS.

During the season of 1916 some of the Alberta creamery butter-makers exhibited butter at Calgary, Edmonton, Regina, Brandon, Vancouver, Toronto, Ottawa and Quebec and brought home sixty-seven prizes made up of three championships, twelve firsts, sixteen seconds, twelve thirds, eleven fourths, five fifths, three sixths, one seventh and four eighths.

I mention this because in entering these contests the exhibitions are doing missionary work for the industry. In obtaining a good standing at these large exhibitions where the contests are keen and where the awards are placed by expert judges, Alberta creamery butter was given considerable publicity which will be found useful when the time comes that the small shipments are to be followed by larger ones. I also appreciate the fact that in participating in these interprovincial contests the creamery men of this and other provinces are helping to establish national quality standards and it is from that point of view

that the Alberta exhibitors are to be congratulated upon their enterprise and the success they have obtained in the keenly contested classes at those various large expositions.

This brief review would, of course, be incomplete without an acknowledgment of the service and encouragement which the exhibition companies render to the dairy industry in making possible these provincial and interprovincial contests.

BUTTER GRADERS' CONFERENCE.

A conference was held at Regina, Sask., on the 10th day of May, 1916, for the purpose of discussing the adoption of uniform grade standards for the creamery butter made in the Provinces of Manitoba, Saskatchewan and Alberta. The conference was called by the Dairy and Cold Storage Commissioner for the Dominion Department of Agriculture and, in a measure, at the initiative of the Dominion Produce Merchants' Association.

Mr. Geo. H. Barr, Chief of the Dairy Division, Ottawa, representing the Dairy and Cold Storage Commissioner, presided at the conference and the following representatives were in attendance from the several provinces: Manitoba, Prof. J. W. Mitchell, Dairy Commissioner, and Mr. L. A. Gibson, Dairy Produce Grader; Saskatchewan, W. A. Wilson, Dairy Commissioner, F. M. Logan, Assistant Dairy Commissioner, Prof. K. G. McKay and Mr. J. R. Crow, Dairy Produce Graders; Alberta, C. Marker, Dairy Commissioner, and Messrs. H. S. Pearson and J. R. Flan, Dairy Produce Graders.

Twenty-three samples of creamery butter had been shipped to the conference from the butter-grading stations at Montreal, Winnipeg, Regina and Calgary. Each produce-grader present scored, individually, all of these samples and their findings were compared. Considering that up to that time the commercial grading of butter in each province had been done independently of the others, there was a remarkable uniformity in the several graders' valuation on the score-card of the quality of the butters examined.

Having found that the scoring of the butter by the graders of each province was practically uniform it became an easy matter for the commissioners to agree to one or two minor changes in the provincial grade standards to make them uniform. For my own part, acting under authority from the Minister of Agriculture, I agreed to raise the minimum score required for first grade butter from a total of 91 points to 92 points. As practically all the butter that was graded firsts at our grading stations during 1915 reached the 92 points the change agreed to was only nominal.

The creamery operators and the wholesale produce houses were duly advised of the change made.

II.—CHEESE FACTORIES AND CREAMERIES.

There were sixteen cheese factories and fifty-seven creameries operating in the province during the year 1916. The cheese factory at Bottrel did not re-open during the year but new ones were established and operated at Didsbury, Wetaskiwin, Ponoka and Winterburn.

Ten of the creameries which were operated in 1915 did not re-open, for various reasons. The plants at Bowden, Wetaskiwin, Vegreville, Pine Lake and Gleichen, which had been closed for some time, were re-opened under new management and new creameries were started at Stonelaw, Medicine Hat, Camrose, Coronation and Alix. Hence, the number of creameries operated in 1916 was the same as in 1915.

There is every probability that several dormant creamery plants will be resuscitated during the present year and a few new ones added to the list. The tendency is for the operators to get closer to the base of cream supplies and this is undoubtedly a good policy when, and where, sufficient patronage can be secured to make operations profitable to all concerned. The "personal contact" element is a very valuable asset to any business. This applies with peculiar force in the creamery industry.

III.—BUTTER MARKETING SERVICE.

During 1916 the operators of 17 creameries entered into an agreement with the department for the marketing of some of their creamery butter. Some of the operators shipped practically their whole output of butter for marketing throughout the year and they were, in the nature of things, the mainstay of the service and apparently well satisfied with the returns. Others would help in filling special orders at certain times of the season, and a few shipped once, or for a short time only, finding the department more exacting in the matter of weights and grade than some of the firms they had been dealing with. To cover cases of that kind the present marketing agreement leaves the shipper free to discontinue at any time.

The following tables I. and II. show the quantity marketed for each creamery and the average selling price for the winter season 1915-16 and the summer season 1916, respectively:

TABLE I.

SUMMARY OF BUTTER SALES—WINTER SEASON 1915-16.

Creamery or Shipper	Pounds of Butter Sold	Selling Price at Calgary	Average Price per Pound Cents
D. Morkeberg, Elmore	19,729	\$ 6,636.25	33.64
D. Morkeberg, Innisfail	4,914	1,669.30	33.97
D. Morkeberg, Markerville	26,353	8,806.85	33.42
Red Deer B. & C. Mfg. Association	2,688	820.40	30.52
B. E. Sickelsteel, Ferintosh	1,344	426.16	31.71
Cardston Creamery Association	16,717	5,452.26	32.62
Viking Co-operative Creamery Association ..	22,202	7,416.84	33.41
F. M. Copland, Raven	112	31.36	28.00
The Beaver Lake Farmers' Creamery Association	2,688	\$60.72	32.02
Totals and Average	96,747	\$32,120.14	33.20

TABLE II.

SUMMARY OF BUTTER SALES—SUMMER SEASON 1916.

Creamery or Shipper	Pounds of Butter Sold	Selling Price at Calgary	Average Price per Pound Cents
Nanton	5,356	\$ 1,505.17	28.1
D. Morkeberg, Elnora	69,433	21,904.67	31.55
D. Morkeberg, Innisfail	64,778	20,492.59	31.63
D. Morkeberg, Markerville	86,984	27,412.93	31.51
D. Morkeberg, Red Deer	4,830	1,733.36	35.87
Red Deer B. & C. Mfg. Association ..	23,165	6,661.70	28.76
John A. Brown	11,025	3,355.64	30.44
Morningside	2,774	767.45	27.67
Cardston Creamery Association	166,843	52,809.41	31.65
Viking Co-operative Creamery Association	47,474	14,412.51	30.36
Hays & Co., Ltd.	58,290	18,044.32	30.96
P. Pallesen	95,348	31,524.39	33.06
A. N. Lindsay	1,479	411.55	27.82
Beaver Lake Farmers' Creamery Association	559	171.03	30.60
Pincher Creek Creamery	2,520	686.00	27.22
H. H. Reimer	1,100	295.36	26.85
Totals and Average	641,958	\$202,188.08	31.49

As the tables show, the department was asked to market 738,705 pounds of creamery butter, or practically nine per cent of the total production of the province.

The difference in the selling prices of the butter received from the several creameries are largely accounted for by the sales having been made upon a grade basis and, to some extent, by the steadily rising market from June onwards and the proportion shipped at different times of the season.

Speaking of marketing conditions, I must say that the buying was unusually active from the beginning to the end of the season. There was not a week when the market exhibited the proverbial "tired feeling."

The western produce merchants continue to show an active interest in the efforts that are being made to improve the quality of our dairy products. This is one of the promising prospects for the welfare of the dairy industry. These men are big enough to see that in promoting the "quality idea" they not only assist in a material way the development of the industry but they also build better and more satisfactory business conditions for themselves.

The men in the trade reflect the requirements and preferences of the consumer.

The produce merchant, wholesaler or retailer, does not sit up nights figuring out how, when and where he can find a market for the produce of any individual producer or group of producers, merely to oblige him or them. This is not his function. He is busy looking up supplies that will please his customers. He will not buy any product unless he knows where and to whom he can sell it with satisfaction and at a profit.

This is the principle which prompts the successful merchant, literally speaking, to go to the ends of the earth, when necessary, to secure the goods that will satisfy his customers. We have seen that principle exemplified during the past few years. In 1909, some sixteen thousand pounds of creamery butter was imported from New Zealand into British Columbia. In five years the imports of New Zealand butter had increased from sixteen thousand to seven million pounds. The discriminating consumers had found the imported commodity to be of a uniformly fine and dependable quality and wanted to buy it in preference to other butter, even at a higher price. The merchants, knowing that *the consumer is always right*, continued the importation until the butter-manufacturer nearer home put his house in order and prepared himself to compete successfully for the best home trade.

MARKETING OF EGGS.

The egg-marketing service was continued under the arrangements described in the Annual Report for 1915. A total of 14,370 dozen eggs were handled and they were classified and sold for the prices shown, at Calgary:

Selects	1.31%	37.35 cents per dozen
No. 1	60.26%	29.193 cents per dozen
No. 2	32.02%	23.619 cents per dozen
Checks	3.72%	10.303 cents per dozen
Loss and Short..	2.69%	
	100.00%	

The cost of the inward freight, the candling and the terminal service amounted to 2.821 cents per dozen eggs handled and was deducted from the selling price in making the final returns to the shippers.

IV.—GRADING OF CREAM.

According to the returns furnished by the operators of the 57 creameries in the province, 49 paid the farmers upon a grade basis for the butterfat in the cream which they furnished. These 49 creameries manufactured nearly 98 per cent. of the total creamery butter-production of the province. The remaining eight did not grade.

Each operator of a cream-grading creamery established his own grade standards and price differentials to correspond with the requirements and preferences of his trade.

According to the returns, 13 creameries worked on two grades, 24 creameries on three grades and 12 creameries on four grades.

The price difference in cents per pound of butterfat in each grade is shown in the following table, viz.:

Two Grades.....	{	1 Creamery made a difference of 1c per pound.
		7 Creameries made a difference of 2c per pound.
		3 Creameries made a difference of 3c per pound.
		1 Creamery made a difference of 4c per pound.
		1 Creamery made a difference of 5c per pound.
Three Grade	{	21 Creameries made a difference of 2c per pound.
		1 Creamery made a difference of 2-3c per pound.
		1 Creamery made a difference of 2-5c per pound.
		1 Creamery made a difference of 4c per pound.
Four Grades.....	{	7 Creameries made a difference of 2c per pound.
		1 Creamery made a difference of 2-3½c per pound.
		4 Creameries made a difference of 3c per pound.

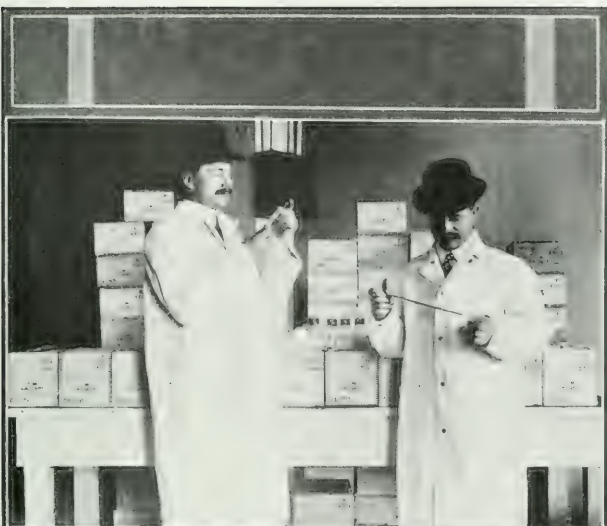
While the grade standards used by the different creameries are fairly uniform, the grade descriptions are quite numerous and it is hoped that in another year it will be found practicable to adopt uniform grade descriptions. There is no doubt that such a course will facilitate matters considerably for the creameries as well as for their patrons.

THE GRADING OF CREAMERY BUTTER.

With regard to the grading of creamery butter, the department was pleased to be called upon to do more of that work this year than the year before. It was especially gratifying to note the general and substantial improvement in the quality of last year's butter production. The grading chart shows at a glance just what improvement has been made from the year 1915 to 1916. The two upper horizontal bars show graphically for each year the average grade of all the butter handled under the grading agreement. Under this agreement we handled samples of 4,676 churnings in 1915, and 5,786 in 1916, at the Grading Stations at Edmonton and Calgary. The percentage of "Specials" increased from 26.7% to 33.5%, and "Firsts" from 42.3% to 48.7% and the lower grades were correspondingly reduced. The next two horizontal bars represent the average grade of butter that has been handled by the Government under the marketing agreement, about 8.8% of the total production of the province. Here, also, we see a marked improvement. The percentage of "Specials" increased from 59.68% in 1915, to 79.25% in 1916, a gain of 20%. The "Seconds" were reduced from 7.34% to 4.01%, and the "Off Grade" from .94% to 12%.

The two horizontal bars of the third section of the chart represent the average grade of the butter output of seven Central Creameries located at Edmonton, Calgary and Lethbridge. Again we note a material improvement. "Specials" increased from 28.4% to 43.7%, and "Seconds" decreased from 25.5% to 12% and the "Off Grade" from 3% to 4.5%.

We have each year been able to show some outstanding feature in connection with the improvement in the quality of the butter made by individual creameries. This year we are pleased to report that the greatest individual improvement was made by the Edmonton City Dairy, in that the percentage of their season's butter output grading "Special" increased from 25.2% to 58%. This is a remarkable showing and indicates good work and a sound business policy on the part of the organization.



DEPARTMENT OF AGRICULTURE, ALBERTA
DAIRY COMMISSIONER'S BRANCH

GRADING OF CREAMERY BUTTER

QUANTITIES	CREAMERIES	SEASON	'SPECIALS'	'FIRST'	'SECOND'	O.G.	DETAILS
4676	14	1915					} GRADING AGREEMENT
5787	21	1916					
1695	26	1915					} MARKETING AGREEMENT
1366	16	1916					
471	7	1915					} SPECIALS
5176	7	1916					

Towards the close of the year a bulletin was published upon "The Grading of Creamery Butter" for distribution among the creamery operators and buttermakers, dealers in dairy produce and others interested. The object of the publication is set out in the Introduction which I now quote:

"The development of the principle of the marketing of Alberta creamery butter upon a quality (grade) basis has been recorded in the Annual Reports of the Department of Agriculture and need not be referred to here at any length. It is sufficient to state that in initiating this movement the Department had the benefit of the co-operation of the progressive creamery operators of the province and of the men who are engaged in the wholesale produce trade.

"When the butter-grading service was instituted apart from the marketing service, it was deemed expedient to base the grades and to issue the grade certificates upon 'representative samples' of butter. Otherwise, only a few creameries were able to take advantage of it.

"The Department maintains butter-grading stations, with good cold storage facilities, at Edmonton and at Calgary. The grading service is made generally available and any creamery operator in the province who wishes to take advantage of it may enter into a formal agreement with the Dairy Commissioner, acting for the Department of Agriculture, in that behalf.

"On the following pages the terms of the 'Grading Agreement' are given, also the Grade Standards and the system of records, with explanatory notes. The Department realizes that a thorough understanding of the nature of the service, and of the conditions upon which it is rendered, is important not only to the creamery operators who avail themselves of it, but also to the men in the produce trade who buy their butter on the basis of the Department's grade certificates.

"The utility, and the continuance, of the grading service, will, in each case, depend upon the proper branding of all packages of butter by the creameries concerned and the rendering of accurate information on the shipping reports as to the identity of each lot.

"It is but fair to state in this connection that nearly 12,000 churnings of butter have been scored and classified by the Department's graders during the past two years, under the 'Grading Agreement,' and that in no case has the Department been called upon to assist in the settlement of any disputes in the manner provided for in Sec. 2 of the Agreement."

V.—THE SEASON'S EDUCATIONAL BUTTER-SCORING CONTEST.

Thirty-five creameries shipped butter to the Department for marketing or grading during the season of 1916 and thereby became participants in the scoring contest. The winning creameries and buttermakers, scores and awards were as follows:

Creamery	Buttermaker	Average Score Points	Award
Innisfail	Wm. Hanson	96.41	Trophy & Gold Medal
Markerville	W. H. Jackson	96.33	Silver Medal
Hays' Dairy, Calgary.	I. Kesnick	95.85	" "
Elnora	A. A. Munro	95.66	
Viking	J. J. Skachtzky	95.58	
Edmonton City Dairy.	C. R. Christensen	95.38	
Calgary Central	K. Vike	95.31	
Cardston	Thos. Pickering	95.23	"
E.C.D. Wetaskiwin ...	R. W. Farmer	95.19	
Carlyle Dairy Co.	Alex. Storrer	95.01	

In the following table the creameries participating in the contest are divided into groups according to the number of churnings scored for each during the season. The comparative figures are also given for 1915, showing:

No. of Churnings	Number of Creameries	
	1916	1915
Up to 50	11	15
50 to 100	4	6
100 to 150	3	5
150 to 200	5	4
200 to 250	4	..
250 to 300	2	2
300 to 350	1	..
350 to 400	1	..
500 to 550	1	..
550 to 600 .....	..	1
600 to 650	1	..
850 to 900 .....	..	1
900 to 950	1	..
1000 to 1100	1	..
2150 to 2200 .....	..	1
	35	35

VI.—INSTRUCTION WORK.

During the month of April two short courses were held for creamery buttermakers at Edmonton and Calgary. While the courses were intended specially for creamery buttermakers and managers, they were open to and visited by others who were interested in the handling of creamery butter.

The Department is indebted to the Managers of the Woodland Dairy, Ltd., and the Edmonton City Dairy, Ltd., of Edmonton, and to Mr. P. Pallesen, Proprietor of the Calgary Central Creamery, for the generous facilities which they placed at our disposal in their well equipped plants to carry on some of the practical work of the courses. The work was carried on under the direction of the writer and the Provincial Dairy Instructors and Produce Graders. The practical work consisted in the testing and grading of cream and butter, the pasteurization of cream and buttermaking. Practical talks were given each day on the more important phases of the creamery business, including the marketing of the product. Ample opportunity was given for questions and discussions.

The regular attendance at the short course at Edmonton was twenty, and nineteen at Calgary.

Since the pasteurization of cream was required to qualify the butter for "Special" grade certificates, particular attention was given to that line of work and several experiments were conducted to demonstrate that it was entirely practicable to employ temperatures which were consider-

ably higher than those generally advocated. Samples of the butter churned were marked for the purpose of identification and put into cold storage to be held for future examination. One of these samples showed, upon close examination, a deterioration of only one-half point in flavor in eight months.

During the summer the Dairy Branch furnished a speaker and demonstrator for the "Mixed Farming Special" train and for the several short course schools which were conducted by the Department. Messrs. Pearson and Scott again acted as instructors in dairying at the Provincial Schools of Agriculture; Mr. Scott was also instructor in poultry husbandry at Vermilion as well.

The instructors visited and inspected a number of creameries and cheese factories and cream shipping stations during the season, though the great bulk of their time was spent at the grading stations.

VII.—ACKNOWLEDGMENTS.

I deem it my duty and privilege to commend the faithful services that have been rendered during the past year by my co-workers in the Dairy Branch—in field, in the office and at the Grading Stations. The commercial and educational work that has been entrusted to this branch demands prompt and careful attention and good judgment on the part of those who handle the details.

I desire also to acknowledge the generous co-operation which we received during the past year from the wholesale produce trade and from the creamery operators, in our efforts to establish and maintain satisfactory grade standards for cream and creamery butter. There is no doubt that the use of such standards promote pleasant and mutually profitable business relations all along the line from the initial producer to the consumer.

Respectfully submitted,

C. P. MAKER,

Dairy Commissioner.

ANNUAL REPORT OF SUPERINTENDENT OF FAIRS AND INSTITUTES

SIR,—I have the honour to submit a report of the Superintendent of Fairs and Institutes for the year 1916.

EXHIBITIONS AND FAIRS.

The fairs during the season of 1916 were, generally speaking, well attended and an increased interest was clearly evidenced on the part of the public, especially at the larger fairs and exhibitions, held at Calgary, Edmonton and Red Deer. Unfortunately, some of the fairs, such as Grande Prairie, Camrose, Carmangay and several others, were badly marred by the heavy rains which prevailed during a good part of July and August, while some of the later fairs, such as Priddis and Etzikom, had to be postponed on account of snow-storms. On the whole, however, the attendance was encouraging and the meetings, almost everywhere, were very successful and helpful to their respective communities.

The quality of the live stock on exhibition was quite up to former standards and in some instances rather superior. Owing to the lateness of the harvest, a good many intending exhibitors and a still larger number of fair-goers who would ordinarily have been present, felt that they could not spare the time to attend the fair nor make an exhibit. The heavy crop and extremely high prices of grain very naturally induced farmers to neglect other matters in order to make sure that their grain was secured in good condition.

Competition was fairly good, as a rule, both in live stock and farm products. The early fairs, almost without exception, made the best appearance in the stock sections, while the later fairs naturally showed by far the best grain, root and vegetable exhibits. As noted in last year's report, the main object of agricultural fairs is the improvement of live stock and farm products by annual friendly competitions and is not merely the distribution of Government money among certain few local exhibitors. To this end, it is necessary that fair secretaries and directors should be men of progressive ideas who should constantly endeavor to stimulate the farmers and breeders to higher efforts and to see that their classifications are satisfactory to the exhibitors and suitable to local conditions.

OFFICIAL JUDGES.

The most complete satisfaction has come from the continued employment of Government-appointed judges. Not only in live stock but in all the other branches connected with the Department, expressions of appreciation have frequently been made in regard to the capability and integrity of the judges and the entire satisfaction given by their awards. As a matter of fact, only one complaint was received last year and it was due entirely to the sickness of the appointed judge, a condition that could not have been foreseen nor prevented. There is no more important factor in the success or failure of any fair than the judge question. Good judges can help materially, while incompetent or biased judges may

DEPARTMENT OF AGRICULTURE



ALBERTA'S WINNERS

easily ruin any competition. Exhibitors should be encouraged to fit, train and exhibit their animals to the very best advantage. We frequently find that some really good animals, that are imperfectly conditioned or handled, often find a lower place in the show ring than they otherwise would, had they been better fitted and shown. The judges will gladly give valuable information or suggestions in regard to this matter when desired.

EDUCATIONAL WORK.

Short Courses of three days each were held as follows:

C. P. R.—		Castor		Feb. 7, 8, 9
Cardston	Jan. 10, 11, 12	Edmonton	Feb. 20, 22, 23	
Foremost	Jan. 13, 14, 15			
Lethbridge	Jan. 17, 18, 19	C. N. R.—		
Vulcan	Jan. 20, 21, 22	Mundare	Feb. 14, 15, 16	
Calgary	Jan. 24, 25, 26	Onoway	Feb. 17, 18, 19	
Medicine Hat	Jan. 27, 28, 29			
Acme	Jan. 31 Feb. 1, 2	G. T. P.—		
Ponoka	Feb. 3, 4, 5	Ryley	Feb. 11, 12	

The attendance at the courses, which were held in the Government tent, was very liberal and encouraging. Much interest was taken in the lectures given by the various speakers, who included the following:

Honorable Duncan Marshall	W. F. Stevens
H. A. Craig	A. W. McIntyre
Alex. Galbraith	Sydney Carlyle
Jas. Clements	Jas. McCaig
A. E. Meyer	and others

The judging classes proved extremely interesting and instructive. Few classes of work or teaching appeal quite so much to a farming community as that in which animals are brought together for comparison: the instruction given in this way is most valuable and is usually appreciated.

The household science and home-nursing classes in connection with the Short Courses were well attended. Miss MacIsaac superintended this section and was ably assisted by Misses Carlyle, Trood and Morkin.

ACKNOWLEDGMENTS.

The Department desires to express its thanks to the following parties who kindly loaned their valuable animals for Short Course work:

Andrew Dollar	A. E. Davenport
Frank Collicutt	Yule & Bowes
Rowland Ness	T. Laycock

The Department is especially indebted to the various railway companies for furnishing cars and giving free transportation for the lecture staff and the live stock attendants. This accommodation, combined with the courtesy and cordial co-operation of officials, assisted greatly in making these Schools a splendid success.



PRIZE HEREFORDS.

INSTITUTE MEETINGS.

Apart from the regular institute meetings of the agricultural societies, there have been fewer meetings held this year by the Department than previously. The reason for this is, in part, that the Department has been unable to secure a sufficient number of well trained and experienced lecturers to enable it to arrange many meetings. Lecturers must have a general knowledge of agricultural science and specific knowledge of the conditions of the district in which they are lecturing, if they are to be of any real value to the farmer. Such men are not plentiful; they cannot be imported from the East, they must be developed. For this reason, and, in part, for the reason that the staffs of the schools of agriculture deliver addresses to many United Farmers of Alberta meetings in their vicinities, the number of institute meetings has been reduced.

MIXED FARMING SPECIAL TRAIN.

Of all the methods adopted by the Department of furnishing instruction to the farmers of Alberta, one of the most popular and effective has been through the medium of the Mixed Farming Train, which toured the province last summer. The various railway companies, as usual, assisted very liberally by providing the necessary accommodations and in moving the train in the most satisfactory manner from point to point.

This train of fourteen cars and coaches was admittedly well equipped. It contained, as usual, draft horses, beef cattle, dual purpose cattle and dairy cattle; a dairy and poultry exhibit car; exhibits from the Schools of Agriculture, showing the work of both boys and girls; an exhibit of hog and sheep-pen models by the Live Stock Commissioner; the Provincial Veterinarian's exhibit of poisonous weeds and hereditary defects in horses; a car of seed and grain exhibits and weeds shown in the growing stage, so that every farmer could recognize the ones he or his neighbors

were most troubled with; an exhibit of model barns from the Demonstration Farms; a natural history car showing mounted specimens of nearly all the birds and wild animals of Alberta: a Women's Institute car in which demonstrations were given daily in cooking and canning, and a nursery car wherein the children were cared for and entertained while their mothers attended the domestic science demonstrations. Many visitors from other provinces and from the United States expressed their surprise and admiration at the completeness and practical utility of the Train.

Included in the lecture and demonstration staff of the Train were the following:

Hon. Duncan Marshall	... Minister of Agriculture.
H. A. Craig, B.S.A.	..... Deputy Minister of Agriculture.
W. E. Duperow	..... Assistant General Passenger Agent, G.T.P.
R. Creelman	..... General Passenger Agent, C.N.R.
J. Dougall	..... General Agricultural Agent, C.P.R.
E. A. Howes	..... Dean of Faculty of Agriculture.
Alex. Galbraith	..... Superintendent, Fairs and Institutes.
Sydney Carlyle	..... Superintendent, Demonstration Farms.
Dr. Talbot	..... Provincial Veterinarian.
W. F. Stevens	..... Live Stock Commissioner.
Benjamin Lawton	..... Provincial Game Guardian.
C. P. Marker	..... Provincial Dairy Commissioner.
W. J. Elliot	..... Principal, School of Agriculture, Olds.
W. J. Stephen	..... Principal, School of Agriculture, Claresholm.
F. S. Gridale	..... Principal, School of Agriculture, Vermilion.
Jas. Clements	..... Assistant Superintendent, Fairs and Institutes.
J. D. Smith	..... Superintendent, Seeds and Weeds.
O. Blue	..... Assistant Superintendent Seeds and Weeds.
Jas. McCaig	..... Editor of Publications.
A. W. Foley	..... Superintendent, Poultry Branch.
N. Steckle	..... Assistant to Live Stock Commissioner.
D. McEachern	..... Assistant Game Guardian.
A. C. McFadyen	..... Assistant Game Guardian.
A. E. Meyer	..... Live Stock Instructor.
H. H. McIntyre	..... School of Agriculture, Vermilion.
O. S. Longman	..... School of Agriculture, Olds.
L. Shanks	..... School of Agriculture, Vermilion.
J. G. Taggart	..... School of Agriculture, Vermilion.
H. W. Scott	..... School of Agriculture, Claresholm.
J. C. Hooper	..... School of Agriculture, Claresholm.
G. R. Holeton	..... School of Agriculture, Olds.
J. Shackleton	..... Superintendent, Provincial Poultry Plant.
Wm. Ingram	..... Assistant Superintendent, Provincial Poultry Plant.
G. W. Scott	..... Dairy Instructor, Innisfail.
H. S. Pearson	..... Dairy Instructor, Red Deer.
Miss M. MacIsaac	..... Superintendent, Women's Institutes.
Miss M. Hayward	..... Domestic Science Instructress.
Miss A. Davis	..... Domestic Science Instructress.
Miss F. Hotton	..... Domestic Science Instructress.

The following places were visited by the train:

CANADIAN PACIFIC RAILWAY.

Cowley	High River	Bowden
Pincher	Aldersyde	Innisfail
Lethbridge	Okotoks	Penhold
Macleod	De Winton	Red Deer
Granum	Calgary	Blackfalds
Claresholm	Airdrie	Lacombe
Stavely	Crossfield	Ponoka
Parkland	Carstairs	Wetaskiwin
Nanton	Didsbury	Millet
Cayley	Olds	Leduc
		Edmonton

GRAND TRUNK PACIFIC RAILWAY.

Chauvin
Edgerton
Wainwright

Irma
Viking
Bruce

Holden
Tofield
Clover Bar

CANADIAN NORTHERN RAILWAY.

Fort Saskatchewan
Bruderheim
Lamont
Chipman
Mundare

Vegreville
Lavey
Ranfurly
Innisfree
Minburn

Mannville
Vermilion
Islay
Kitscoty
Lloydminster



SHORT COURSE SCHOOL

EXCURSIONS.

A series of excursions to the three Schools of Agriculture, at Vermilion, Olds and Claresholm, took place early in August. These excursions lasted three days each but owing to the busy season the attendance was not as large as anticipated. An interesting and instructive programme was provided at each school, which included the judging, feeding and care of live stock; diseases of farm animals and their treatment; study of crops and methods of culture; identification of weeds and weed seeds; a study of barn plans, suitable for Alberta; farm poultry problems; farm dairying; the farm gasoline engine; household science, including cooking, canning, sewing, laundrying and home nursing. The excursion idea is a good one but some changes will be made this next season in regard to the date selected and the time occupied, which will, doubtless, be an improvement over last year.

ALEX. GALBRAITH.

Superintendent.

FUTURE OF THE HORSE AND THE HORSE OF THE FUTURE

By ALEX. GALBRAITH, *Supt. Fairs and Institutes.*

This is a twofold subject, the one portion interdependent on the other, and yet in a sense totally separate and distinct and without any co-relation. It is also a most important subject, but like all matters pertaining to the future it is necessarily speculative. Whether there will be any horses in the future or any use for them, and if so, what they will be like are the questions at issue today and are certainly important ones for the Canadian farmer. There have been so many extraordinary changes and inventions in the last few decades, so many undreamed of occurrences and discoveries that the force of the old Scottish rhyme is now more applicable than ever:

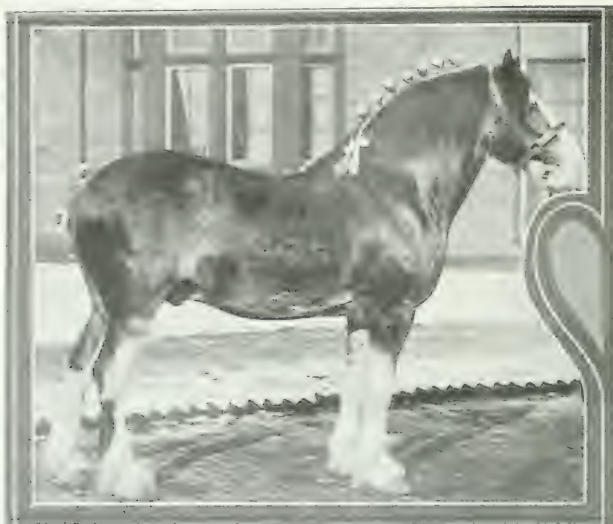
"Ye needna say this thing nor that canna be,
For the langer ye live the mair uncoss ye see."

Who, for instance, could have imagined fifty years ago that, instead of horse-drawn omnibuses in the cities, street cars would everywhere be moved by electricity; and trucks, cabs and carriages by gasoline; or that by means of the telephone, people could converse hundreds or even thousands of miles apart and transmit messages by wireless over sea and land; or by speaking, singing or playing into a simple-looking graphophone, the voice or sound could be reproduced ever afterwards? Or coming down to the present European conflict, who in the last century could have fore-casted armies by the million burrowing in the ground like worms, moles or miners; the orthodox cavalry scouts supplanted in great measure by aviators, and ships of all kinds sent instantaneously to the bottom of the sea by the invisible reptile submarine torpedo?

Such changes were not only unforeseen but the very wildest speculative dreamer never even suggested any of them. And so with regard to horses and their various uses.

It will be remembered that when railway transportation first came into general use nearly a century ago many predictions were made that the horse's days of service and usefulness was over. Instead of this, however, experience showed that by the natural expansion of trade which followed there was more work and more need for horses than ever. There are probably fifty times as many horses employed today throughout the world as there were when railroads were introduced, and their average value five hundred per cent. greater. And strange to say that in spite of the fact that electric and motor cars and busses have replaced horse power in every city and urban community, the price of good draft horses is practically as high as ever. All light horses, including Coachers, Hackneys and roadsters, however, have gone by the board and, like Othello of old, their occupation is gone—probably never to return. Saddlers are still appreciated but only by a comparatively small number of people. The so-called "Tin Lizzie" car of Henry Ford's holds the fort meantime and probably will continue to do so if the supply of gasoline or other motive power holds out. Even standard-bred trotters and thoroughbred race horses are not in demand because legislative measures in recent years have all been in the direction of restrictions with regard to race meetings, and, of course, since the war started, Canadians have manifested less interest in horse races than formerly.

The light horse, therefore, being practically supplanted permanently, what about the draft horse and his competitors, present and prospective? So far as city work is concerned, the probability is that motor trucks will continue to usurp the place of the draft horse, with increasing success. At present the condition of the streets and the length of the haul determine the amount of success which motor trucks have had. With the average short haul or on rough unpaved streets, the horse has a big advantage over the truck, but under the most favorable conditions, the latter is a successful competitor with the horse. Another thing must be kept in mind and that is the probable improvements that are likely to be made in mechanical traction from time to time. Some large motor factories, that have hitherto made principally passenger cars, may and doubtless will turn their attention to the motor truck business, and by greatly increasing the output may reduce the cost to the point of successful competition with horses. The same conditions may come to apply to some extent in field tractors for farm work. So far, however, the large tractor in the field



ALBERTA'S PRIDE.

has been voted a practical failure on account of its expense, while the small tractor is presently on trial. The chief difficulty seems to be that there are many rainy days when it is impossible to use a tractor on the land and yet horses can do a satisfactory day's work. The same trouble arises where the land is naturally or even partially damp and "soggy"—horses invariably do much better and more satisfactory work, and can be depended on under all conditions.

As regards the future, it appears to me that, at any rate so far as farming operations are concerned, horses will always be required in some capacity. They may and doubtless will be supplanted in certain kinds of work but no farmer in the wide world can operate successfully without horses, either now or in the near future. The type of horse may change according to altering conditions, and my judgment would be that possibly a rather lighter or at any rate more active horse may replace the slower moving and more phlegmatic draft horse of the present day. All horses, and especially draft horses, should be taught and encouraged to walk faster than they do now. There is no greater need of improvement in any respect than in the development of the walking gait and yet this has hitherto received very little attention, either by the breeder or in the show ring. Another very necessary improvement is the practical elimination of all forms of hereditary unsoundness. This is a necessity which cannot and must not be overlooked or ignored. Sound horses are active, docile horses are wanted in every civilized country today; they will be wanted in increasing numbers for a good many years to come, and it is hard to realize that the day will ever come when horseless farms will ever be a reality, as some people predict. Mr. Edison stated publicly some ten or twelve years ago that no kind of horses would be in service at this date and that before many years horses would be a rarity. The fact that there are many millions more horses today than a decade ago, and that the average value of horses in North America is greater than ten years ago and twice as great as it was twenty years ago, only proves that Mr. Edison, with all his wonderful ability, is not a very reliable prophet in this respect.

When the war is over and the various European countries re-stock their devastated farms, and when the enormous tracts of open prairie in the North-West come under cultivation, the demand for good draft horses will be unprecedentedly great and the prices probably higher than we have ever known.

The idea of a horseless age, even in the distant future, is impracticable and Utopian, and farmers of the present day will best consult their own interests by courageously increasing rather than reducing their draft horse breeding operations, use good judgment, care and intelligence in their work and

"On reason build resolve,
That column of true majesty in Man."



REPORT OF THE SUPERINTENDENT OF WOMEN'S INSTITUTES

SIR,—I have the honour to submit herewith the Women's Institute Annual Report for 1916.

The past year has been a year of remarkable development in the Women's Institutes of Alberta. In the first place the organization of the institutes was changed in an important way. The Women's Branch of Institute work secured its autonomy, the new organizations being set out in an Act of the Legislature, the terms of which are as follows:

OBJECTS OF THE WOMEN'S INSTITUTES.

The objects of the Women's Institutes shall be the improvement of social conditions in rural and other communities by means of:

(1) The study of home economics (including home nursing, household science, sanitation, food values, sick-room cookery, house-furnishing, sewing and other matters), child welfare, prevention of disease, local neighborhood needs, industrial and social conditions.

(2) Establishing the Women's Institutes as a social and educational centre in the community and utilizing it as a means of welcoming new settlers;

(3) The encouragement of agriculture and improvement of agricultural conditions;

(4) The holding, establishment and maintenance of demonstrations, lectures, short course schools, travelling and other libraries, exhibitions, competitions, meetings, conventions and such other utilities and attractions as may from time to time be deemed useful for the promotion of the foregoing objects or any of them.

ORGANIZATION OF INSTITUTES.

Women's Institutes may be formed under this Act in the following manner:

An application in Form A in the schedule hereto and containing the information indicated as required thereby shall be signed by not less than eight women, married or single, all at least sixteen years of age, residents of the community to be served, and not being members of any other Women's Institutes formed under this Act.

Every woman signing such application shall pay at least twenty-five cents as or as part of her first annual subscription to the funds of the proposed Institute and such monies shall be paid to and held by one of the subscribers in trust for the Institute.

The application shall be verified by one of the subscribers in the form appended to said Form A.

The application so verified shall be forwarded to the minister, who, if he approves, may declare the subscribers and others who may thereafter become members, to be organized into a Women's Institute under the name of "The Women's Institute." He shall thereupon issue a certificate of incorporation thereof in Form B in the schedule

hereto, and thereafter such institute shall be a body corporate under said name with the objects and powers aforesaid together with the power of holding such real and personal property as may be necessary for its objects. It shall also be capable of receiving and holding any real or personal property by grant, gift, legacy, or devise and of investing the same or the proceeds thereof and of using the same or any part thereof to the provisions of this Act, in the furtherance of the objects of the Institute.

An Institute may change its name upon obtaining the minister's approval to do so.

Each Institute shall adopt a corporate seal, but for the purpose of uniformity the design shall be approved by the minister.

ORGANIZATION.

As soon after incorporation as is practicable a meeting of the subscribers and of others who may be qualified as hereinafter mentioned to become members and who may so desire shall be held at the call of one of the subscribers to be designated by the minister and at such time and place and on such notice as he may direct.

Such meeting shall be the organization and first annual meeting of the Institute.

A report of said meeting certified by the president and secretary to be elected thereat shall be forwarded by the secretary to the minister within two weeks after the meeting; such report shall include a copy of the minutes of the meeting and shall contain a list of the members and of the officers and committees elected and appointed.

MEMBERSHIP.

The qualification for membership shall be as stated in Sub-section 1 of Section 4 of this Act and any woman having such qualification may become a member of an Institute on application to the secretary and on payment to the treasurer of the membership fee, which shall not be less than twenty-five cents.

At the time of such application and payment of fee the applicant for membership shall give the secretary the post office address to which all notices shall be sent.

OFFICERS.

The officers of an Institute shall be president, two vice-presidents, a secretary and a treasurer or a secretary-treasurer, who shall be ex officio directors, and at least three directors.

There shall be (in addition to the said three) one director for every ten members in excess of thirty.

There shall be two auditors.

The persons qualified to vote for or to be elected as officers shall be only those members regularly enrolled, who have paid their membership for the ensuing year. To enable persons to become members, the secretary and treasurer, or the secretary-treasurer, as the case may be, shall be at the place appointed for the annual meeting one hour previous to the hour set for such annual meeting.

All officers shall be elected by ballot after previous verbal nomination.

A majority of the ballots cast shall be necessary to a choice.

Officers shall hold office till their successors are elected.

In the event of an officer of an Institute dying or resigning office or otherwise vacating the same during the period for which she was elected, the directors shall appoint an eligible person to fill the office for the unexpired term.

COMMITTEES.

Each Institute may appoint such special committees as it may from time to time require. The president shall be ex officio member of all committees.

MEETINGS.

Every Institute shall hold its annual meeting (other than the organization meeting) on the first Saturday in the month of December in each year at the hour of two o'clock in the afternoon at such place as the directors may appoint.

At least two weeks' notice shall be given of any annual or special general meeting of an Institute: such notice shall be in writing and either posted by mail to the furnished address of each member or delivered personally at such address. Any further notice may be given which the directors may think fit.

Special general meetings may be called by the directors. The notice calling such shall specify the nature of the business to be transacted.

In case of failure to hold the annual meeting as provided in Section 16, the minister may appoint a time for holding the same, and the secretary shall notify the members thereof in the manner aforesaid.

The presiding officer at meetings of an Institute shall be the president, or in her absence a vice-president, or in the absence of president and vice-president a chairman shall be appointed.

The following shall be the order of business at annual meetings:

Reading and disposing of minutes of preceding annual and intervening special general meetings.

Reports of officers.

Reports of committees.

Unfinished business.

Election of officers.

New business.

Appointment of committees.

Appointment of delegates to annual convention.

Addresses and discussion.

Adjournment.

DIRECTORS' MEETINGS.

Directors' meetings shall be held upon ten days' written notice mailed or delivered by the secretary under the instructions of the president, to each director, at any place or at any time if and when a quorum is present.

The directors shall, subject to the provisions of this Act and of the bylaws and regulations of their Institute, have full power to act for and on behalf of the Institute and all grants and other funds of the society shall be administered under that direction.

QUORUM.

Five directors shall constitute a quorum at a meeting of the executive of the Institute.

BYLAWS.

Each Institute at an annual or special general meeting called for that purpose may make, alter or repeal bylaws or regulations for its general management not inconsistent with the provisions of this Act, such bylaws or regulations shall, however, not have force until approved of by the minister.

The directors shall not sell, mortgage, let or dispose of any real property of the Institute unless authorized so to do by a special general meeting called for that purpose.

This section shall, however, not be construed to prevent them from letting their premises for any meeting or convention which would not interfere with the business or meetings of the Institute.

RETURNS.

A financial return, which shall include a statement in detail of assets and liabilities, receipts and expenditures for the current year with vouchers, shall be made to the minister at least ten days before the annual meeting.

GRANTS.

There may be paid by the Department out of any money appropriated to it for the purpose to each Institute having a paid-up membership of ten or more an annual grant of ten dollars.

The grants mentioned shall be paid only on condition:

(a) That at least four meetings of the Institute have been held during the preceding Institute year, except in the case of an Institute having been organized during the year.

(b) That a financial statement satisfactory to the minister has been made under Section 27 of this Act.

(c) That a list of officers for the current year has been furnished the Department.

SUPERINTENDENT OF WOMEN'S INSTITUTES.

The Lieutenant Governor in Council may appoint a superintendent of Women's Institutes and such other officers as may be required to assist the minister in the performance of his duties under this Act and may provide for the remuneration to each, and may confer on such superintendent power to examine the books and accounts of any Institute.

The duties of the superintendent other than those referred to in the last preceding section shall be such as are from time to time conferred or imposed on her by the minister.

EXISTING INSTITUTES.

Women's Institutes already in existence may be declared by the minister to be incorporated under this Act under a name similar in form to that provided for it in Subsection 4 of Section 4 hereof and thereafter all the provisions of this Act shall apply thereto.

DISORGANIZATION.

If it be made to appear to the minister that any Institute should be disorganized, he may order and declare that on and after a day to be named by him such Institute shall be disorganized and thereupon the same shall cease to exist.

Upon the disorganization of an Institute, the minister may appoint a liquidator or liquidators to adjust and settle the assets and liabilities of such Institute and such liquidator or liquidators with the approval of the minister shall have power to sell, dispose of, transfer and convert into money all the assets and property of the Institute and to apply the said money so far as it will extend in payment, first, of his or her remuneration to be fixed by the minister, and, secondly, in payment of the liabilities of the society and the surplus, if any, shall be paid into the general revenue fund of the province.

CONVENTIONS.

For the purpose of interchange of ideas and the promotion of their common objects, an annual convention of Women's Institutes may be held at such time and place as shall be appointed by the minister. At such convention the provincial president of Women's Institutes, or in her absence a chairman to be chosen by the convention, shall preside.

Such convention shall be held under the direction of the minister, assisted by the provincial advisory board hereafter provided for.

Forthwith after receiving notice of the time and place for the holding of such convention, the secretary of each Institute shall call a special general meeting at which delegates to represent the Institute at such convention shall be appointed; substitute delegates may also be appointed to take the place of delegates who may find themselves unable to attend.

PROVINCIAL ADVISORY BOARD.

There shall be a provincial advisory board which shall consist of the deputy minister, the superintendent of Women's Institutes and seven members chosen at the annual convention.

The duties of the provincial advisory board shall be to advise the minister in any matter arising in connection with Women's Institutes and their work.

The said board shall meet on the call of the superintendent of Women's Institutes.

The secretary-treasurer shall report the recommendations of the said board to the minister forthwith after each meeting.

REGULATIONS.

The minister shall have power to make regulations and provisions not inconsistent with this Act for the carrying out of the objects thereof.

The second feature of the development was that of general expansion in the number of organizations carrying on work in the province. Within the year 1916 the number of Branch Institutes increased from one hundred and seven to one hundred and thirty-five, and the membership from 3,000 to 3,700.

SOCIOLOGICAL OUTLOOK.

These figures are significant and encouraging but are really not of great importance apart from the rapid transformation in the aims, ideals and actual accomplishments of the Women's Institutes. While the organization was in its infancy, the aims and likewise the performance of the work were of a rather elementary type. They related largely to such elementary matters as improvement in cooking, sewing, sanitation, etc. While these matters were important, they are not of a nature to result in any transformation in the isolated and self-centred life of the country family. The great change that has taken place and one that is going to change the whole country outlook is that of engaging the interest and activity of country people in community undertakings. The demands of the war have been instrumental in calling out a new type of community work. In fact, this larger type of work has, to a considerable extent, monopolized the interest and activity of the women of the country just as it has in the case of the men.

During the past year fourteen thousand, eight hundred and fifty dollars have been raised by the Institutes for the various war funds, and hundreds of packages of clothing and Red Cross supplies have also been contributed.

NEIGHBORHOOD IMPROVEMENT.

While the activities of the Institutes have been directed almost exclusively to Red Cross and patriotic work, much has also been accomplished along the line of community improvement. Public libraries have been established; the number of rest rooms in operation have almost doubled within the year; garden contests and flower shows have been held by an increased number of Institutes, while other Institutes have organized Children's Day, when prizes were donated for general proficiency, regular attendance at school, drawing, sewing, cooking and flowers.

The establishment of medical inspection of rural schools, and trained nurses for remote rural districts, is the goal toward which many Institutes are working, and we note with pleasure that several Institutes have completed arrangements for establishing a trained nurse in their community.

OUTLOOK OF THE INSTITUTES.

It is evident that when the war is over, the training and experience which the women of the country and the towns have gone through in co-operative undertakings will have equipped them to transform the lives of their immediate communities. Certainly every phase of Institute activity

emphasizes the growth and the larger sociological aims of the women's organizations in the country. By coming together for any single kind of community effort, women are enabled as never before to exchange experiences and give mutual help on matters ranging from the simplest concerns of household practice to larger social improvements, and to become to a greater extent than ever before transforming influences in the whole community life, relating to home-keeping and home-making, sanitation, educational services, hospital services, medical inspection of schools, social, literary and other improving organizations. The outlook is in the highest sense encouraging.

INSTRUCTION AND LIBRARY WORK.

During the year short course schools in household science were given the following Institutes: Cardston, Foremost, Vulcan, Red Deer and Ponoka. These schools were given in conjunction with the agricultural short course schools and consisted of demonstrations and lectures in cooking, home nursing, sewing and laundry work. In the month of September one week's course of instruction in cooking, sewing, home nursing, first aid, etc., was given in the three Provincial Schools of Agriculture for Institute members and their friends.

In July and August twenty-eight Institutes were visited by the Mixed Farming Special Train; demonstrations in cooking and canning were given by Miss Hotton and Miss Davis of the Provincial Schools of Agriculture. A special feature of the Train was that of the addition of a "Nursery Car." Here fifteen hundred and ninety children were cared for while their mothers visited the various exhibits throughout the Train.

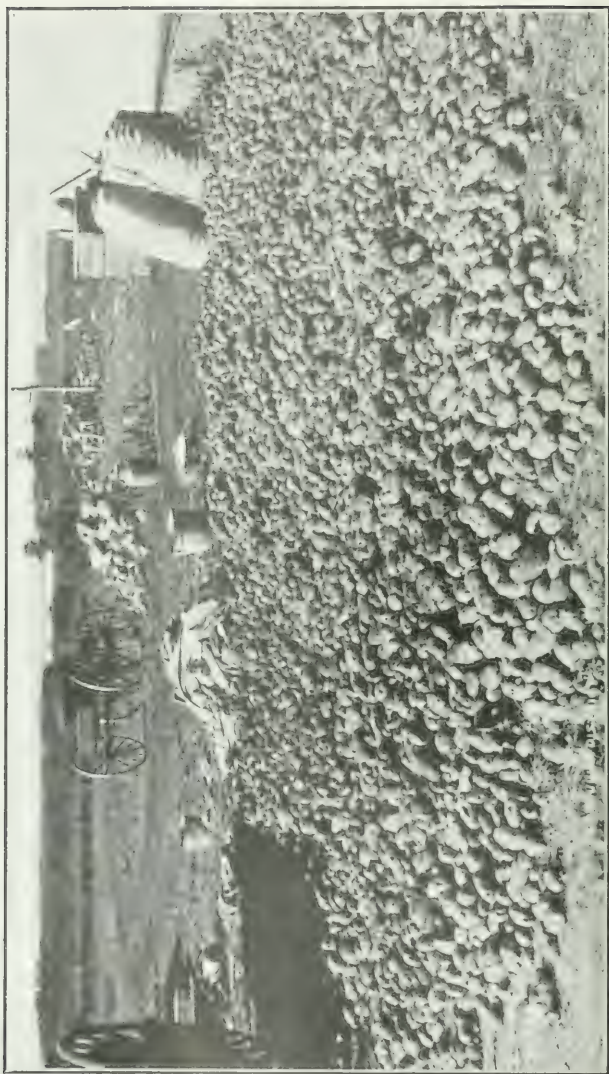
Lecturers and demonstrators have also been furnished to other Institutes throughout the Province, and in every case keen appreciation has been shown by the members.

During the year bulletins, books, papers, and articles on numerous subjects were sent upon request to members of various Branches, thus assisting them in the preparation of papers and addresses for their monthly meetings. Many Branches also received our Travelling Library.

Respectfully submitted,

MARY MACISAAC,

Superintendent.



A GOOD CROP OF POTATOES.

REPORT OF THE SUPERINTENDENT OF THE SEED AND WEED BRANCH

SIR,—I beg to submit herewith the report of the Superintendent of the Seed and Weed Branch.

WEEDS.

During the year 1916, the work of this branch was carried on in many respects similarly to that of 1914 and 1915.

In nearly every instance the same local weed inspectors were employed, and they were appointed in the districts as near to their own homes as possible. In a few districts it was necessary to engage new men. The inspectors who have been on the work for two or three years have proved the most valuable to the community, and the most satisfactory to the Department, inasmuch as they are acquainted with the different farmers and their farms, and therefore know when and where to give advice. The longer a weed inspector is engaged in one district, the more familiar he becomes with the unoccupied lands, which are the cause of more trouble in the spreading of weeds than any other agency. In 1916 no weed inspectors were appointed north of Calgary. Any complaints received by the Department from the north, were looked after through the office of the Superintendent, and judging by the number and nature of the complaints received, the Department was justified in dispensing with the services of the weed inspectors in Northern Alberta, especially when there was so much work to be done in the south that it necessitated the expenditure of the total appropriation for weeds to be made there.

Owing to the land in the north being more or less covered with small trees, wind does not blow weeds to the same extent as in the south. Besides, in the north there is usually more rainfall, which practically prevents plants such as Russian Thistle, Tumbling Mustard and Tumbleweed from propagating to any great extent. It may also be said that the northern part of the province is more extensively cultivated, and the farms operated as mixed farms, which aids more than anything else the eradicating of noxious weeds. On the other hand, the climate, soil conditions and the baldness of the prairie in the south are ideal conditions for the spreading of tumbling weeds such as those above mentioned, and as these conditions will continue to exist, the south will always require more attention with regard to noxious weeds.

On account of not engaging any weed inspectors in Northern Alberta, the Department was in a better position to make earlier appointments of inspectors for the south and to keep them employed almost through the entire season. The result of this was very gratifying and the undersigned is thoroughly convinced that there never was a more systematic and satisfactory inspection of the weeds in Southern Alberta, and that it was never more free from weeds.

In comparing the weed situation in Southern Alberta today with what it was from 1910 to 1914, one cannot fail to notice the marked improvement in respect to such weeds as Tumbling Mustard, Hare's

Ear Mustard, Tumble-weed, Tansy Mustard, Blue Lettuce and Russian Thistle. If the difference is so great, and there is reason to believe that it is, the question of how the improvement took place ought to be of interest.

The weather conditions were favorable, and the farmers realized that it was impossible to grow a crop of weeds and of grain at the same time, hence they made an effort to sow cleaner seed, and to summerfallow more and better. They planted less stubble land and did more harrowing after the crop was up. The local weed inspector for the district was called from time to time to see that the farmer did not allow the weeds to grow, and in cases of negligence or other disregard of the Weed Act, he gave instructions to have the weeds destroyed before they went to seed. Weed inspectors are sometimes criticized severely, but, if they were taken off for a couple of years, the result would be serious.

While many of the annual weeds are decreasing, it is obvious that some of the more pernicious kinds are increasing, especially the perennials. This may be somewhat due to the fact that the attention of the inspectors has been almost wholly occupied with certain weeds such as Stinkweed and other plants of the drifting or tumbling habit.

One perennial that is making alarming advancement is the Canada Thistle. This plant thrives during wet years, and is very difficult to eradicate then, owing to the necessity of killing the underground root-stock, which can be successfully accomplished only during long, dry, hot periods. This year, the Department made a vigorous campaign to have all Canada Thistles cut before they went to seed, and from the reports received, we believe that the work was a success.

Perennial Sow Thistle is also making itself noticeable during the past few years, and unless drastic measures are used to check its spread, it will become a greater menace than the Canada Thistle. Its habits of growth and means of propagation are similar to those of Canada Thistle, but it is considerably more difficult to destroy. The Department made an



SPLENDID WEED ERADICATORS

investigation to ascertain in what localities this weed occurred, and found that in ninety per cent. of the cases, it was growing in cities, towns and along railways, and that in many instances, the seed had been brought in with straw used in packing. Up to the present, this weed is only found in small patches in agricultural land, but it is recommended that farmers endeavour to guard against it, and should they find any on their farms, or other lands, immediate steps should be taken towards destroying it. In destroying this plant, it should be dug up, the roots taken from the ground, gathered and burned. The patch should be visited every two weeks until assured that there is no further evidence of the plant.

EDUCATIONAL WORK.

Educational work in connection with the weed branch was not neglected. In June a three-day weed convention was held at the School of Agriculture, Claresholm, when over one hundred delegates were in attendance. The delegates were men engaged by the department, the rural municipalities, and the local improvement districts, as weed inspectors. During the three days of the convention, they listened to various lectures, studied the identification of weeds and weed seeds, discussed the best methods of eradication, and general uniformity in weed inspectors' work. At the close of the convention, the delegates passed an unanimous vote to have the convention held annually.

Educational work was further carried on through lectures at the short course schools held at various points throughout the province, at the local seed fairs, field crop competitions, and the provincial seed fair. At any fair or competition judges have strict instructions to disqualify any exhibit or field of grain containing noxious weeds.

This branch had an exhibit filling half of a passenger coach on the Mixed Farming Special which covered many of the railways of the province. The exhibit consisted of fifty growing weed plants. These plants were shown at different stages of maturity, and proved very instructive to the many thousands of visitors. They made it possible for the instructor to show and explain the characteristics of the different weeds, and the farmer having seen them in the growing stage, could better identify them should he find any on his own farm.

During the summer, several hundred plants were identified for farmers throughout the province, and so many weed bulletins were distributed that a supply of 25,000 printed three years ago, was entirely exhausted.

A new bulletin has been prepared, and is expected to be ready for distribution during the spring of 1917. This bulletin will have twenty-one coloured plates, showing as near as possible, the natural colour of the growing weed. It will also have two plates showing the seed of each weed, enlarged many times, and it is hoped that this will enable the farmer to identify weed seeds in his grain. The new bulletin will give a more complete method of eradication of such weeds as are considered dangerous, than the old one did, and will give more information on poisonous weeds.

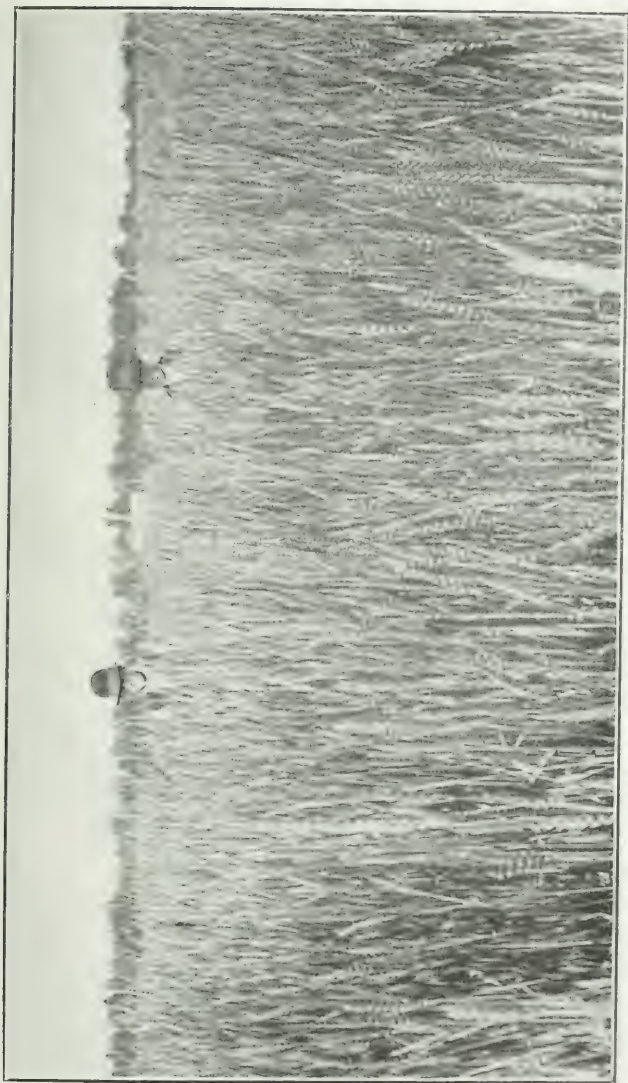
The following is a list of the weed inspectors employed during 1916, with their addresses:

Beard, H. A.	Taber
Burns, W. H.	Reid Hill
Callaway, E. J.	Cochrane
Chase, Ralph	Masinasin
Chambers, Jno.	Avalon
Christie, V.	Cardston
Clark, Jno.	Gleichen
Delaney, G. B. P.	Lethbridge
Elliott, T. J.	Pincher Station
Gaudette, P. S.	Morinville
Giles, W. H.	Munson
Gillies, A. C.	Bowell
Gillette, Wm.	Okotok
Goddard, J. H.	Hilda
Grady, L. T.	Warner
Hagerman, T. H.	Parkland
Harrison, H. C.	Magrath
Haines, L. A.	Turin
Hopewell, Ed.	Cardston
Hogarth, Robt.	Cochrane
Hynes, N. W.	Gleichen
Johnston, R. J.	Parkland
Lynn, Ed.	Albion Ridge
Murray, Geo.	Whitla
MacLean, Alex.	Staunton
McDougall, Dan	Winnifred
McCallum, Robt.	Sunnydale
Nalder, W. B.	Raymond
Pearson, Geo.	Macleod
Robinson, H. L.	Eyremore
Smibert, G. H.	Elkwater
Smith, J. C.	Cravath Corners
Sobey, E. S.	Alderson
Taylor, E. J.	Barnwell
Wickson, A. M.	Cayley
Woodman, J. M.	Charesholm

SEED GRAIN.

During the year 1916, thirty-two seed fairs were held, twenty-five crop competitions, three good farms competitions, and one provincial seed fair. There was a slight increase in the number of seed fairs and field crop competitions as compared with 1915, and although this increase did not come up to expectations, the quality of the exhibits was much better than in previous years. At the thirty-two seed fairs and the provincial seed fair over one thousand different samples of grain were judged, and the reports show that the quality and purity of the exhibits were an improvement over previous years.

The field crop competitions were, in some cases, larger than in other years. The total number of fields judged was about seven hundred, the fields being made up of wheat, oats, barley, flax, timothy, field roots and garden vegetables. In some of the competitions over forty fields were entered in a single class. This number, with the long distance to drive between each, made it necessary for the judge to spend four or five days in judging one competition. According to the judges' reports, these competitions are the means of stimulating a keen and wide interest in the growing of good fields of grain, etc., and we believe



MARQUIS WHEAT YIELD 70 BUSHELS PER ACRE

that the money expended in connection with them is well spent. The following is a list of the field crop competitions held during the summer of 1916:

NAME OF SOCIETY	DATE	JUDGES
Waterhole	Aug. 9-12.....	Oliver Blue
Empress	Aug. 10.....	R. J. McGowan
Stony Plain	Aug. 10.....	Geo. Hutton, Sr.
Berry Creek	Aug. 11.....	R. J. McGowan
Edgerton	Aug. 12-15.....	Geo. Hutton, Sr.
Raymond	Aug. 12.....	H. W. Scott
Hanna	Aug. 12.....	R. J. McGowan
Munson	Aug. 14.....	R. J. McGowan
Mannville	Aug. 14.....	J. D. Foster
Vernillion	Aug. 14-16.....	E. A. Howes
Vegreville	Aug. 17.....	J. D. Foster
Taber	Aug. 15-16.....	W. J. Stephen
Stettler	Aug. 17.....	J. G. Taggart
Consort	Aug. 21.....	J. G. Taggart
Wainwright	Aug. 21.....	Geo. Hutton, Sr.
Lacombe	Aug. 22-23.....	E. R. Rasmuson
St. Albert	Aug. 23.....	F. S. Grisdale
Irma	Aug. 23.....	Geo. Hutton, Sr.
Okotoks	Aug. 23.....	W. J. Stephen
Camrose*	Aug. 24-25.....	J. G. Taggart
Leduc	Aug. 24-25.....	F. S. Grisdale
Three Hills	Aug. 28.....	Geo. Hutton, Sr.
North Alberta (Colinton)	Aug. 31.....	Lawson Shanks
Daysland	Sept. 9.....	E. R. Rasmuson

The provincial seed fair for 1916 was satisfactory in every respect. The quality of the grain shown was not as good as in 1915, but out of 375 entries, few exhibits showed signs of frost. One of the outstanding features was that the champion bushel of oats was grown in the Athabasca district. Exhibits came from all parts of the province, and the prize list, made up of cash prizes amounting to \$1,500 offered by the Department, and \$800 worth of special prizes donated by business men of Calgary, was much appreciated.

A report is made on the local seed fairs, provincial seed fair and field crop competitions. This report is published and gives the names and addresses of exhibitors, the variety of their grain and the number of bushels for sale with the price per bushel. There has been great demand for this publication, and about 2,500 are distributed each year. The Department keeps a list of the farmers having seed grain for sale, and is in a position to advise farmers where it can be secured.

Much attention is now being given to potatoes in this province. Most of the agricultural societies offer prizes for potato exhibits, and the exhibits appear to have been large; for example, forty samples of potatoes were exhibited at the provincial seed fair. It was estimated that 5,000,000 bushels of potatoes were grown in the province last year, and that something like 1,500,000 bushels were exported to Eastern Canada and the United States. The prices paid were generally good, and although Alberta is a new province in the matter of exporting potatoes she has already gained a reputation for growing good potatoes, which makes a bright prospect for the farmer along this line.

The growing of timothy for seed is another new industry which is coming to the attention of farmers, and one which deserves every consideration. Until this year the Dominion of Canada annually imported

about 250 cars of timothy seed from the United States; in other words, approximately \$600,000 of Canadian money was being spent in the States each year to purchase seed which can be grown in Alberta better and cheaper than it can be grown there. The Department realized these conditions two years ago, and did everything possible to encourage the Alberta farmers to make use of this opportunity. A bulletin dealing with timothy seed was published, and 5,000 copies were distributed. Officials of the Department visited the timothy-growing areas, and arrangements were made with the Dominion Government for the cleaning and grading of the seed at the Terminal Elevator, Calgary. This was a great step in the handling and marketing of the seed. In the year 1914 only sufficient timothy was grown in Alberta to supply the local demand. In 1915 five or six carloads were exported, while in 1916 seventy-five cars will have been shipped by the spring of 1917. These seventy-five cars will mean, not only a new revenue for the farmers of Alberta of something like \$175,000, but the straw of this seed can be used and fed to stock at home, instead of being shipped out as before, thus tending to encourage mixed farming.

Respectfully submitted,

J. D. SMITH,
Supt., Seed and Weed Branch.

REPORT OF THE POULTRY BRANCH FOR 1916

SIR.—I beg to submit herewith the Annual Report of the Poultry Branch for the year 1916.

GENERAL POULTRY CONDITIONS.

The poultry industry of the province during 1916 has been seriously affected by war conditions. A number of the poultrymen of the province have enlisted for overseas, making it necessary for them to dispose of their flocks. Another factor retarding the development of the industry has been the high cost of feed. The high prices received for grain have caused many to reduce the size of their flocks, while others have disposed of their entire flocks until such time as grain can be secured at a price which will warrant the taking up of poultry work again. This is perhaps more particularly true with residents of villages, towns and cities.

While there has apparently been less increase in the number of poultry kept, as compared with former years, there has been a decided improvement in the quality. The high cost of feed has resulted in close culling and in fewer birds being kept, but the birds, particularly in the pure breeds, are of higher standard, having greater egg-producing qualities. This condition has been brought about partly through the results of the egg-laying competitions which have been conducted at the Provincial Poultry Plant under the direction of this branch. The high laying records made by many of the hens in these competitions have demonstrated the laying possibilities of poultry, and many poultry-raisers who have followed the work of the competition, have realized, especially under present conditions, the advisability of disposing of unprofitable birds.

PRODUCTION GREATER THAN PROVINCIAL DEMAND.

Notwithstanding the fact that the poultry industry is developing under difficulties, it is gratifying to note that while up to two or three years ago it was necessary to import large quantities of eggs into the province, we are now producing sufficient poultry and eggs to meet all local demands. Not only is sufficient being produced for local consumption, but large quantities are now being sent outside the province, a number of carloads of eggs being shipped to Eastern points. The majority of our surplus, however, was sent to British Columbia in which province we have a ready market for all the surplus poultry and eggs of high quality that we can produce.

The markets have been good throughout the year and the prices realized were higher than in previous years, partly due to the fact that both live and dressed poultry are being shipped in to the market centres in a much superior way than a few years ago.

EDUCATIONAL WORK.

Education along poultry lines has been conducted on a large scale during the past year. Instruction was given at each of the three Agricultural Schools, where a very thorough course was given to both First and Second Year Boys and Girls. The course is as follows:

FIRST YEAR STUDENTS.

1. General Survey.
2. Location of Poultry-houses and Plants.
3. Poultry-house Construction.



1916 POULTRY EXHIBIT, MIXED FARMING SPECIAL.

4. Interior Fixtures of Poultry-houses.
5. History and Development of Domestic Poultry.
6. Egg Production.
7. Strain-building.
8. Incubation.
9. Rearing.
10. Fattening.
11. Marketing (a) Eggs (b) Poultry.
12. Turkeys.
13. Ducks.
14. Geese.
15. Identifications of Utility Breeds.

SECOND YEAR STUDENTS.

1. General Review of First Year.
2. Technical Poultry Terms.
3. Classification of Poultry Produce for Markets.

The demand for Poultry Bulletin No. 3, "Successful Poultry-raising," issued during the spring of 1915, was so great that another issue was printed early in 1916.

When the "Agricultural Special" toured the province, the Poultry Branch fitted one of the cars with models of different kinds of poultry houses, coops, brooders, trap-nests, drinking fountains and other poultry appliances, as well as views of houses and equipment at the Provincial Poultry Plant, University Grounds, South Edmonton. A poultry specialist was in the car at all times explaining these models, answering the questions of persons going through the car, and taking addresses to which poultry literature was to be mailed.

Lectures on poultry raising illustrated with lantern slides were given by the writer at the Collegiate Institute, Normal School, High School and St. Andrew's Church in Calgary and at the three Schools of Agriculture. When the Ogden Home for Returned Soldiers was established, Poultry keeping was undertaken by some of the soldiers. This branch furnished day-old chicks and year-old birds for the work, and endeavoured to assist those in charge of the Home to locate any other stock the Poultry Plant was unable to supply it; it also gave instruction in Poultry-house Construction and Poultry-raising.

Another branch of the poultry work carried on during the year was the Second Trap-Nest Egg-Laying Competition held at the Poultry Plant from Nov. 15th, 1915 to October 14th, 1916. The following rules and regulations governed the competition:

RULES AND REGULATIONS.

1. Competition to be carried on from November 15th, 1915 to October 14th, 1916. Date for receiving pen to be any time after November 5th.

2. Each pen to consist of six pure-bred pullets (1915 hatch) not less than six months old. The Competition Committee reserves the right to reject any bird or birds not considered a proper age.

3. The feathers of the right wing of each bird of the light-weight varieties mentioned must be cut before forwarding to the Poultry Plant. The wing to be kept cut during competition.

4. Any bird or birds found to be suffering from any contagious disease or in a verminous condition when received at the poultry plant will be rejected.

5. All eggs are to become the property of the Poultry Branch. Eggs under $1\frac{1}{2}$ oz. in weight or soft-shelled eggs not to be counted.

6. Any pen, the eggs from which do not attain an average weight of 22 ounces per dozen before the expiration of the first three months of the competition to be ineligible for a prize, should one be offered.

7. The Competition to be divided into two classes:

Class No. I.—To consist of light weight varieties.

Class No. II.—To consist of heavy weight varieties.

8. All birds to be housed in the regular houses of the Provincial Poultry Plant, allowing at least five square feet of floor space per bird.

NOTE.—By this plan trap-nest records will be taken, which the Committee consider of more practical value to competitors and an advance step in egg-laying competition.

Even greater interest was taken in this competition than in the first competition. We received many letters asking for our system of feeding, housing, etc., as the enquirers were of the opinion that they had as good layers in their own flocks but were unable to get the results we were accomplishing at the Plant.

The reports of the competition are published monthly in the leading newspapers of the province and in the Poultry papers in Canada; they are also available for free distribution.

Instead of having six birds to each pen, it was decided to have eighteen birds (3 pens) in each section of the house. Each alternate partition was taken out, which gave more floor space to the birds and thus overcame inconveniences that occurred in the first competition. This plan proved entirely satisfactory. The competition proved that provided proper care and management were used with birds of good laying strains, a good profit could be made, notwithstanding the high cost of feed.

The final report and summary showing the standing of the pens at the close of our second competition is as follows:

ELEVENTH AND FINAL MONTH ALBERTA TRAP-NEST EGG-LAYING COMPETITION REPORT

Second Provincial Egg-laying contest held under the supervision of the Provincial Department of Agriculture at the Poultry Plant, University Grounds, S. Edmonton, Alta., from Nov. 15th, 1915 to Oct. 14th, 1916.

TOTAL EGGS LAID DURING COMPETITION, AND FROM SEPT. 15th TO OCT. 14th, 1916.

CLASS I.—NON-WEIGHT VARIETIES, SIX BIRDS TO A PEN.

Pen	Owners and Breeds	Eggs in Month	Total Eggs
2	Nels Linden, Wetaskiwin, Alta., S. C. White Leghorns	29	917
6	S. H. Jones, Gen. Del., Calgary, S. C. White Leghorns	24	856
4	J. Thompson & Sons, High River, Alta., S. C. Black Leghorns	13	838
5	J. O. Scott, Edmonton, S. C. Black Leghorns	22	697
3	J. H. Regan, 78th Ave., S. Edmonton, S. C. White Leghorns	27	677
1	E. H. Young & Sons, DeWinton, Alta., S. C. White Leghorns	2	639

CLASS II.—WEIGHT VARIETIES, SIX BIRDS TO A PEN.

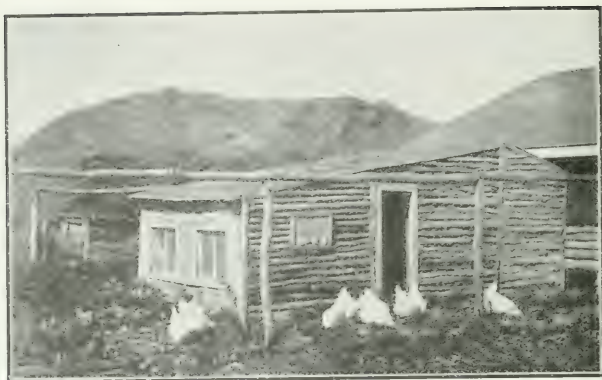
Pen	Owners and Breeds	Eggs in Month	Total Eggs
7	J. H. Regan, 10726 78th Ave., S. Edmonton, Buff Orpingtons	108	1081
8	C. C. Ewing, Lacombe, Alta., Buff Orpingtons	78	1008
14	A. R. Gillies, Clover Bar, Alta., Barred Rocks	103	1000
13	D. P. Woodruff, Magrath, Alta., Barred Rocks	82	880
21	A. Fowler, 254 Morris St., Edmonton, S. C. Reds	74	812
10	Floyd Lawler, 89th Ave., S. Edmonton, White Wyandottes	47	805
11	J. E. Swanson, West Edmonton, Alta., White Wyandottes	53	796
24	F. Stevens, 2202 11th Ave. W., Calgary, White Wyandottes	53	779
16	J. H. Wallace, 125th St., Edmonton, Barred Rocks	37	748
22	T. H. Halford, 7th St., Edmonton, White Wyandottes	32	738
17	E. A. Quantz, Monitor, Alta., Barred Rocks	63	717
15	J. R. Beer, Land Office, Calgary, Barred Rocks	14	653
23	Hugh Jones, Hastings St., Edmonton, S. Laced Wyandottes	51	611
12	N. Northwood, 127 14th Ave. W., Calgary, W. Wyandottes	28	601
19	Mrs. G. W. Scott, Innisfail, Alta., R. C. Reds	9	598
18	J. J. Skalitzky, Viking, Alta., Barred Rocks	42	590
20	E. Sillitoe, Edmonton, R. C. Reds	24	536

Summary: Total eggs for month... 1027; Total eggs to date... 17,672

Average per hen per month ..7.66 eggs. Total average to date ..129.61

There were 796 eggs less than the previous month, due largely to the number of hens moulting particularly in the non-weight varieties. Pen No. 7 leads in the number of eggs laid during the month and wins first place in the competition. Pen 8, the winner of second place, has been a close competitor each month during the competition and deservingly takes second place. Pen No. 14 made a dash during the last month and reached the 1000 egg mark.

Hen No. 50 in Pen 7 leads in the number of eggs laid with 28 eggs, followed by Hen No. 33 in Pen 14 with 25, Hen No. 90, Pen 17, with 24 eggs, and Hens No. 53 in Pen 7, No. 15 in Pen 13, and No. 31 in Pen 14 with 23 eggs each.



COSTLY HOUSES NOT NECESSARY. OTHER CONDITIONS ARE MORE
ESSENTIAL TO SUCCESS.

FINAL REPORT AND SUMMARY
SECOND ALBERTA TRAP-NEST EGG-LAYING COMPETITION
Nov. 15th, 1915, to Oct. 14th, 1916. (11 months.)

Winning Pens—Non-Weight Varieties.		Individual Records of Winning Pens.						
Pen 2	S. C. W. Leghorns	.....917 eggs	171	127	166	155	139	159
Pen 6	S. C. W. Leghorns	.....856 eggs	174	191	114	126	75	176
Pen 4	S. C. B. Leghorns	.....838 eggs	115	163	160	133	121	146

Winning Pens—Weight Varieties.		Individual Records of Winning Pens.						
Pen 7	Buff Orpingtons	.....1081 eggs	199	169	152	157	178	226
Pen 8	Buff Orpingtons	.....1008 eggs	198	164	217	136	158	135
Pen 14	Barred Rocks	..... 1000 eggs	203	156	195	193	112	141

RECEIPTS FROM WINNING PENS (FOR COMPETITION).

Non-Weights			Weights		
Pen	Eggs	Receipts	Pen	Eggs	Receipts
2.....	917.....	\$24.48	7.....	1081.....	\$31.94
6.....	856.....	23.38	8.....	1008.....	30.09
		\$47.86			\$62.03

INDIVIDUAL RECORDS AND RECEIPTS

Highest Non-Weights				Highest Weights			
Pen	Hen No.	Eggs	Receipts	Pen	Hen No.	Eggs	Receipts
6.....	92.....	191.....	\$ 5.30	7.....	54.....	226.....	\$ 6.96
x6.....	96.....	176.....	5.27	8.....	21.....	217.....	6.50
6.....	91.....	174.....	4.79	22.....	81.....	217.....	6.15
				14.....	31.....	203.....	5.42
			\$15.36				\$25.03

x Died September 17.

Lowest Non-Weights				Lowest Weights			
Pen	Hen No.	Eggs	Receipts	Pen	Hen No.	Eggs	Receipts
1.....	11.....	56.....	\$ 1.30	17.....	87.....	0.....	\$.00
6.....	95.....	75.....	1.98	23.....	17.....	46.....	1.80
1.....	10.....	82.....	2.00	22.....	84.....	64.....	2.13
				20.....	11.....	69.....	1.61
			-5.23				\$5.54

HIGHEST PEN RECORDS AND RECEIPTS
WINTER MONTHS, NOV. 15th TO APRIL 14th.

Non-Weights			Weights		
6.....	315.....	\$ 9.27	7.....	476.....	\$16.75
2.....	293.....	9.48	8.....	444.....	15.91
4.....	297.....	9.39	21.....	322.....	11.75
		\$28.14			\$44.41

HIGHEST INDIVIDUAL RECORDS AND RECEIPTS
WINTER MONTHS, NOV. 15th TO APRIL 14th.

Non-Weights—			
xHen No. 96.....	Pen 6.....	S. C. W. Leghorns.....	85 eggs.....\$2.11
Hen No. 24.....	Pen 2.....	S. C. W. Leghorns.....	68 eggs.....2.40
Hen No. 92.....	Pen 6.....	S. C. W. Leghorns.....	66 eggs.....2.40
x Died September 17.			
Weights—			
Hen No. 49.....	Pen 7.....	Buff Orpingtons.....	96 eggs.....\$3.64
Hen No. 82.....	Pen 22.....	White Wyandottes.....	93 eggs.....3.61
Hen No. 50.....	Pen 7.....	Buff Orpingtons.....	98 eggs.....3.54
Hen No. 21.....	Pen 8.....	Buff Orpingtons.....	96 eggs.....3.42

200 EGG HENS (11 months.)

Hen No. 54, Pen 7.....	226 eggs	Hen No. 21, Pen 8.....	217 eggs
Hen No. 81, Pen 22.....	217 eggs	Hen No. 31, Pen 14.....	203 eggs

Special mention may be made of the following hens:

Hen No. 49, Pen 7.....	199 eggs	Hen No. 19, Pen 8.....	198 eggs
Hen No. 33, Pen 14.....	195 eggs	Hen No. 34, Pen 14.....	193 eggs

PENS WHERE EACH INDIVIDUAL HEN HAS LAID 150 EGGS OR OVER
Pen No. 7.....Buff Orpingtons.

125 EGGS EACH OR OVER

Pen No. 2.....S. C. W. Leghorns.	Pen No. 8.....Buff Orpingtons.
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100 EGGS EACH OR OVER

Pen No. 3.....S. C. W. Leghorns.	Pen No. 4.....S. C. Black Leghorns
Pen No. 10.....White Wyandottes.	Pen No. 13.....Barred Rocks.
Pen No. 14.....Barred Rocks.	Pen No. 21.....S. C. Rhode Island Reds.
Pen No. 24.....White Wyandottes.	

RECEIPTS FROM EGGS BY MONTHS

November	155 eggs @ 45c per dozen.....	\$ 5.81
December	512 eggs @ 50c per dozen.....	21.33
January	696 eggs @ 60c per dozen.....	34.80
February	1138 eggs @ 45c per dozen.....	42.68
March	2459 eggs @ 35c per dozen.....	71.72
April	2445 eggs @ 25c per dozen.....	50.94
May	2585 eggs @ 25c per dozen.....	53.85
June	1982 eggs @ 25c per dozen.....	41.29
July	1915 eggs @ 30c per dozen.....	47.88
August	2083 eggs @ 35c per dozen.....	60.76
September	1479 eggs @ 35c per dozen.....	43.14
October	313 eggs @ 40c per dozen.....	10.43
	17672 eggs	\$484.63

PRICES OF EGGS.

Highest	60c per dozen	Lowest	25c per dozen
Average per dozen		39.5c	

FEED CONSUMED AND COST.

Dry Mash	1045 lbs. @	\$1.40 per cwt.....	\$ 14.63
Dry Mash	1047 lbs. @	\$1.30 per cwt.....	13.61
Wet Mash	500 lbs. @	1.40 per cwt.....	7.00
Wet Mash	830 lbs. @	1.30 per cwt.....	10.79
Beef Scrap	1650 lbs. @	4.00 per cwt.....	66.00
Shorts	496 lbs. @	1.00 per cwt.....	4.96
Shorts	210 lbs. @	1.20 per cwt.....	2.52
Wheat	1243 lbs. @	1.00 per bushel.....	20.71
Wheat	556 lbs. @	1.25 per bushel.....	11.58
Oats	648 lbs. @	.34 per bushel.....	6.48
Oats	297 lbs. @	.45 per bushel.....	3.90
Barley	204 lbs. @	.40 per bushel.....	1.70
Barley	285 lbs. @	.55 per bushel.....	3.26
Shell	354 lbs. @	1.25 per cwt.....	4.42
Grit	80 lbs. @	1.25 per cwt.....	1.00
Cut Bone	130 lbs. @	3.00 per cwt.....	3.90
Buttermilk	112 gals. @	.01 per gallon.....	1.12
			<hr/> \$177.58

RECEIPTS, EXPENDITURES AND COMPARISONS.

Total Receipts	\$484.63
Total Cost	177.58
Profit on Eggs Sold Over Cost of Feed	\$297.05

ELEVEN MONTHS.

Average Receipts per Hen..	\$3.51	Average Receipts per doz.	39.50c
Average Cost per Hen.....	1.29	Average Cost per doz.....	12.11c
Average Profit per Hen....	\$2.22	Average Profit per doz....	27.39c

FIRST COMPETITION—TEN MONTHS.

Average Receipts per Hen..	\$3.07	Average Receipts per doz.	30.90c
Average Cost per Hen.....	1.08	Average Cost per doz.....	10.90c
Average Profit per Hen....	\$1.99	Average Profit per doz....	20.00c

CARE AND MANAGEMENT.

HOUSING—The birds were housed in the same building as those of the former competition, which was constructed of one thickness of drop-siding on outside studding, lath on the inside of studding and space stuffed with straw. Cotton windows were used entirely with drop curtain in front of roosts.

For this competition every alternate partition was removed and three pens of six birds each were housed in what was formerly two pens. This plan allowed better floor space, made the pens much more convenient in caring for the birds, and proved entirely satisfactory in every respect.

RATIONS AND FEEDING.

Dry Mash Ration.

Bran	25 lbs	Alfalfa Meal	12½ lbs.
Shorts	25 lbs.	Bone	5 lbs
Oat Chop	25 lbs.	Charcoal	1 lbs.
Barley Chop	12½ lbs.		

This mixture was constantly before the birds in self-feeding hoppers. beef scrap, oyster shell and grit were also kept before the birds in hoppers.

Wet Mash.—A wet mash consisting of the dry mash ration to which boiling water and 15 lbs. of Beef Scrap was added and shorts to partially dry the mash, was fed three times a week in the evening.

Grain Rations.—A light feed of the whole oats was given each morning in the litter. During the winter a light feed of wheat, oats or barley was given at noon to insure exercise. Whole wheat was fed in the evening when no wet mash was given.

Green Feed.—Throughout the winter months alfalfa and sprouted oats were given as green feed. During the summer months sufficient green feed was produced in the runs.

WEATHER CONDITIONS.

The weather throughout the competition may be called unusual in many respects and was not nearly as favorable for egg production as during the former competition. The severe weather of January had a much more serious effect on the records of the non-weight varieties. The weight varieties secured a good lead during the first three months that they easily maintained to the end of the competition.

HEALTH OF THE BIRDS.

No sickness or contagious disease developed and the health of the birds with one exception was excellent throughout. Of the 138 entered only four died as compared with 12 deaths of the 120 entered in the previous competition.

OBSERVATIONS ON THE COMPETITION.

There is still good profit in egg production even though feeds are abnormally high in price.

In comparison with the first competition it was found that the actual cost per hen was increased by 9c while the average cost per dozen was increased from 10.9c to 12.11c. At the same time the average price received was increased from 30.9c to 39.5c and the profit over cost from 20c to 27.39c per dozen.

Profits depend largely on when the eggs are laid more than the number laid.

Hens and pens with good records lost a place in amount of receipts because others with lower records gave greater returns when eggs were high priced. Poor layers it was found invariably laid their eggs when prices were low.

Hen No. 87 in Pen 17 did not lay during the competition, the other five hens in this pen averaged 143 2-5 eggs each.

At the tenth month of this competition the average per hen was almost identically the same as that of the tenth and final month of the First Competition, while at the same time both pens and individuals had made higher records than in the First.

POULTRY EXHIBITIONS.

Large and successful poultry shows were held at Calgary, Edmonton and Lethbridge, where there has been a great advancement both in the quantity and quality of the poultry exhibited. The same may be said of the local poultry shows held within the province.

The 1916 Provincial Poultry Show was held at Medicine Hat on December 27th. It was very successful. There was a large entry of birds of excellent quality and the show was well supported by other associations affiliated with the Alberta Provincial Poultry Association.

At the close of the Provincial Show, the annual meeting of the Association was held, when the following officers were elected:

Patrons: His Honour R. G. Brett, Hon. A. L. Sifton.
Hon. President: Hon. Duncan Marshall.
Hon. Vice-Presidents: Hon. A. J. McLean, H. A. Craig, E. N. Barker,
John A. McDougall and P. Burns.
President: A. W. Foley, Edmonton.
1st Vice-President: T. A. Benson, Edmonton.
2nd Vice-President: J. H. Westbrook, Lethbridge.
Sec.-Treasurer: W. H. Fairley, Calgary.
Executive Committee: C. M. Barker, Calgary; W. A. Moore, Medicine Hat;
P. King, Lethbridge; Jos. Shackleton, Edmonton.
Auditor: Jas. B. Sutherland, C.A., Calgary.

THE PROVINCIAL POULTRY PLANT.

The work at the Provincial Poultry Plant during the year has been most satisfactory. The houses were moved so that the arrangement would be more suitable for the carrying on of the work and the plant has a much improved appearance.

The breeds kept are Barred Rocks, White Wyandottes, Rose and Single Comb Rhode Island Reds, and Single Comb White Leghorns. High class stock of each of the following varieties of breeds is being purchased for our plant work; White Wyandottes, Barred Rocks, Rose Comb Rhode Island Reds and Buff Orpingtons. Trap-nests were placed in some of the houses and official records are being kept of the birds at the plant. We hope with this stock to greatly improve the quality and to be in a better position to supply trap-nested stock than formerly, for we found that owing to the educational work, many poultry raisers want stock from trap-nested laying strains.

Egg and day-old chicks are supplied in the spring at the following prices:

Eggs: \$1.00 per setting of 13 eggs, settings for \$2.50, and \$3.00 for 50 eggs, orders limited to 50.

Chicks: \$1.00 for 25, orders limited to 25 chicks.

After we had accepted a large number of orders for both eggs and chicks, we found that we were unable to fill as many as we expected as a new policy was adopted by which we supplied eggs for hatching to the children of rural schools and we therefore were unable to fill all the orders.

There has been a large demand for breeding stock, which started early in the fall with the result that very little stock is now on hand that we have to spare. However, the policy of this office has always been to find the requirements for enquirers if possible, and when we are unable to supply their wants, we endeavour to refer them to parties who have the desired stock for sale.

Respectfully submitted,

(Signed) A. W. FOLEY.

Poultry Superintendent.

GREATER POULTRY PRODUCTION.

By A. W. Foley.

The Poultry Branch has made special effort during the past year to promote greater production in view of the greater demand placed upon the Canadian people as a result of the war. There is every prospect that during the coming year the poultry raisers of Alberta will respond to the call of the mother country in her hour of trial, not only because she has asked for our poultry products, but because of the patriotic spirit that prevails generally throughout the province.

Poultry raisers can readily increase their production if they give it proper attention. Careful consideration to the housing of their birds is an important factor, not necessarily expensive houses, but houses in which attention has been given to the matter of light, ventilation and sanitary conditions. Each of these factors has a direct bearing upon the prospective results because strong healthy birds are necessary to success.

More care should be given to the selection of the breeding of laying stock. Birds that have undesirable qualities in constitution, vigor, maturity and breed characteristics should be discarded. Breeding stock should have every desirable quality to insure success. Under the present system, too many of our poultry raisers are breeding from their flocks indiscriminately. The eggs gathered for hatching are too often from birds low in vitality, immature and defective in many ways. This system is no good; it will surely retard the possibility of greater production. Then, too, this system of gathering eggs for hatching is of such a nature that the eggs are not secured from known good layers. Only eggs from the best layers should be used for hatching, thereby insuring the building up of good laying strains.

Throughout the winter, the poultry keeper should identify the birds that lay, so that when eggs are required for breeding purposes, the birds so identified may be separated and mated with a male bird from a hen of known egg-producing qualities. By following this system of selection there would result a substantial increase in the egg yield.

There are often excessive losses caused by careless or indifferent attention given to the growing chicks. Serious losses occur because of the lack of sanitary conditions in the coops, especially when vermin develop and sap the life of the young chicks. Unwholesome or undesirable foods also have an injurious effect, producing diarrhoea and other diseases that increase mortality. Chicks reared in well ventilated coops, protected from the weather, kept free from vermin and fed clean, wholesome foods, will have low mortality and a satisfactory growth. A continuous supply of suitable foods is necessary at all times during the rearing period. A constant and rapid growth is necessary to mature the pullets for winter laying and the surplus male birds for market.

Birds intended for market should be separated at the proper age from the pullets and confined to a limited range or crate to be fleshed for market. Demonstrations on fattening poultry have proved time and again that excellent profits may be derived from this system. Higher prices are always realized for milk-fed poultry. Not only is it more profitable, but there is more satisfaction to both buyer and consumer.

Should our poultry raisers give the desired attention to their flocks, they could in the course of the next two years, double their present revenue with the same housing capacity, the same number of birds and the same quantity of feed.

Briefly, the requirements necessary to accomplish this are, better housing accommodation in the matter of light, ventilation and sanitary conditions, greater care in the housing and feeding of the growing stock, more intelligent selection of breeding stock for egg production and more attention to preparing the poultry and eggs for market.

REPORT OF THE RECORDER OF BRANDS

SIR,—I have the honour to submit the following report on the work of this branch of your Department for the year 1916.

During the year 1503 horses and 2838 cattle brands were allotted and recorded to their respective owners, while 462 transfers and 28 changes were duly recorded. Certified extracts of brands numbered 14, while searches and strays numbered 787, being a total of 5632 transactions.

Compared with the previous year (1915) these figures show an increase of 153 horses, 939 cattle brands and one change, while transfers decreased by 281, extracts 66 strays and searches 505, leaving a total increase for the ordinary work of the year of 241 transactions.

The following table shows the different transactions which have taken place since separate records for the province have been kept:

Year	Horse	Cattle	Trans.	Changes	Strays & Extracts
1906 ..	1361	1891	384	38	73
1907	1030	1230	430	28	73
1908	1103	1225	421	29	232
1909	1308	1326	430	33	783
1910	1891	1672	524	34	1218
1911	1538	1280	362	32	1408
1912	1545	1542	374	16	1655
1913	1471	2059	419	11	1795
1914	1764	2629	395	18	1932
1915	1350	1899	743	27	1372
1916	1503	2838	462	28	801
Average 11 years ..	1442	1781	449	27	1037

From the above statement it will be seen that the horse brands issued during the year, slightly exceed the average of the past ten years, while the cattle brands exceed the average by over 1,000.

The large number of new cattle brands (2838) is the largest allotment we have had in any one year and forms a record for the office. This large increase may be accounted for by the fact that the two past seasons have been exceptionally prosperous ones for the farmers of Alberta, and with money to spare they are naturally turning their attention more to stock-raising. Perhaps, too, the experience of the years 1913 and 1914, when the grain-growing, especially in the southern part of the province, was anything but a success, has had a good effect, and the farmers are now laying a solid foundation for the future by adopting more and more the principle of mixed farming.

The second year of renewing or continuing brands closed at the 31st of December. During this period no fewer than 510 brands, which should have been renewed on or before the 31st of December, 1915, were

re-allotted to owners, bringing the number of renewals for that year, which were given in last year's report as 7805, up to 8315, or about 36% of the old brands. This was a much larger proportion of renewals than was estimated.

There were 7222 renewal notices issued to owners of brands, which required to be continued during the year 1916, and at the end of the year 2869 of that number had been renewed. As was expected, that was a considerable increase in the percentage of renewals above 1915, the latter, with re-allotments, being 36%, while the former is 40% with a considerable number of brands to be renewed.

A meeting of the Brand Commissioners was held in July last at which a new series of brands for cattle was approved, but owing to the very large demand for cattle brands, it will be necessary to hold another meeting some time during the early spring or summer to arrange for future series.

The letters received during the year were 13,739, while the number of documents despatched was 30,398, or a total of 44,137.

I have the honour to be,

Yours obediently,

JAS. WILSON.

Recorder of Brands.



BIG GAME STILL PLENTIFUL IN NORTHERN ALBERTA.

REPORT OF CHIEF GAME AND FIRE GUARDIAN

SIR,—I have the honour to submit herewith my Eleventh Annual Report in connection with the enforcement of The Game Act and The Prairie Fires Ordinance for the year 1916.

I.—PROTECTION OF GAME.

I am pleased to be able to again report that with the exception of prairie-chicken and partridge, game is reasonably plentiful. Mountain sheep and mountain goat are undoubtedly on the increase. Moose are equally as plentiful as in former years, except in some of the thickly settled districts. Deer are equally as plentiful as in former years, although fewer have been killed. Caribou, if anything, are on the decrease. Antelope are increasing, but there is not a sufficient supply as yet to warrant an open season.

With fewer hunters for big game during the open season of 1916, together with lack of snow during the month of November, and in fact until almost the last week of the open season, conditions were not as favorable for hunters as usual, the result being that fewer big game animals were killed.

GAME BIRDS.

Conditions favored the hunter of wild ducks during the months of September and October, the weather was reasonably fine and a plentiful supply of birds. Sportsmen report good bags and birds in good condition after the 20th of September. The market-hunters were successful in securing the usual amount, the prices realized were satisfactory. It is to be regretted that the market-hunter is still permitted to kill for the market. Fewer wild-geese, cranes and swans than usual were killed. Prairie-chicken (sharp-tailed grouse), partridge, (ruffed grouse), these being considered the most valuable of our game birds. I regret to say were exceptionally scarce. The scarcity of these birds may be attributed to various causes, such as wet breeding season, spring fires, destruction by coyotes and other predaceous animals and too much hunting during the open season of two months. If these birds are to be preserved it will be necessary to shorten the open season to, at the most, one month. This should be the month of October, as in the month of November, which is so often cold and stormy, the birds are driven into the trees and straw-stacks where they are readily picked off by the hunter.

I am pleased to be able to report that the Treaty between Great Britain and the United States relating to the protection of migratory birds was ratified at Washington on the 7th day of December, 1916. As this is a matter of the utmost importance and of great interest to all lovers of wild life, as well as to game protectionists, I take the liberty of quoting those sections which bear directly on game protection in Alberta.

The High Contracting Powers agree that, as an effective means of preserving migratory birds, there shall be established the following close seasons during which no hunting shall be done, except for scientific or propagation purposes under permits issued by proper authorities:

1. The close season on migratory game birds shall be between March 10 and September 1, except that the close season on the *Limicolae* or shore-birds in the Maritime Provinces of Canada and in those States of the United States bordering on the Atlantic Ocean which are situated wholly or in part north of Chesapeake Bay shall be between February 1 and August 15 and that Indians may take at any time scooters for food, but not for sale. The season for hunting shall be further restricted to such period not exceeding three and one-half months as the High Contracting Powers may severally deem appropriate and define by law or regulation.

2. The close season on migratory insectivorous birds shall continue throughout the year.

3. The close season on other migratory non-game birds shall continue throughout the year, except that Eskimos and Indians may take at any season auks, auklets, guillemots, murres and puffins, and their eggs, for food and their skins for clothing, but the birds and eggs so taken shall not be sold or offered for sale.

ARTICLE III.

The High Contracting Powers agree that during the period of ten years next following the going into effect of this Convention, there shall be a continuous close season on the following migratory game birds, to wit:

Band-tailed pigeons, little brown, sandhill and whooping cranes, swans, curlew and all shore-birds (except the black-breasted and golden plover, Wilson or jack snipe, woodcock, and the greater and lesser yellowlegs); provided that during such ten years the close season on cranes, swans, and curlew in the province of British Columbia shall be made by the proper authorities of that province within the general dates and limitations elsewhere prescribed in this Convention for their respective groups to which these birds belong.

ARTICLE IV.

The High Contracting Powers agree that special protection shall be given the wood-duck and the eider-duck either (1) by a close season extending over a period of at least five years, or (2) by the establishment of refuges, or (3) by such other regulations as may be deemed appropriate.

ARTICLE V.

The taking of nests or eggs of migratory game or insectivorous or non-game birds shall be prohibited, except for scientific or propagating purposes, under such laws or regulations as the High Contracting Powers may severally deem appropriate.

ARTICLE VI.

The High Contracting Powers agree that the shipment or export of migratory birds or their eggs from any State or Province during the continuance of the close season in such State or Province, shall be prohibited except for scientific or propagating purposes, and the international traffic in any birds or eggs at such time captured, killed, taken or shipped at any time contrary to the laws of the State or Province in which the same were captured, killed, taken or shipped shall be likewise prohibited. Every package containing migratory birds or any parts thereof or any eggs of migratory birds transported or offered for transportation from the United States into the Dominion of Canada, or from the Dominion of Canada into the United States, shall have the name and address of the shipper and an accurate statement of the contents clearly marked on the outside of such package.

ARTICLE VII.

Permits to kill any of the above-named birds which, under extraordinary conditions, may become seriously injurious to the agricultural or other interests in any particular community, may be issued by the proper authorities of the High Contracting Powers under suitable regulations prescribed therefor by them respectively, but such permits shall lapse, or may be cancelled, at any time when, in the opinion of said authorities, the particular exigency has passed, and no birds killed under this article shall be shipped, sold or offered for sale.

ARTICLE VIII.

The High Contracting Powers agree themselves to take, or propose to their respective appropriate law-making bodies, the necessary measures for insuring the execution of the present convention.

ARTICLE IX.

The present convention shall be ratified by the President of the United States of America, by and with the advice and consent of the Senate thereof, and by His Britannic Majesty. The ratifications shall be exchanged at Washington as soon as possible and the convention shall take effect on the date of the exchange of the ratifications. It shall remain in force for fifteen years, and in the event of neither of the High Contracting Powers having given notification, twelve months before the expiration of said period of fifteen years, of its intention of terminating its operation, the convention shall continue to remain in force for one year and so on from year to year.

The provisions of this Treaty will of necessity require the amending of the Alberta Game Act to correspond with the provisions of the Treaty where the Act and the Treaty now differ. This will apply more particularly to geese, swans and cranes, all shore birds except the black-breasted and golden plover, Wilson snipe, woodcock, and the greater and lesser yellowlegs. The birds mentioned in Article III will be protected for a period of ten years, with no open season whatever during this time.

In 1913 the Federal Government at Washington enacted legislation along the lines of the Treaty, in the interests of the preservation of migratory birds which winter in the United States. This legislation conflicted to a greater or less extent with the laws of many of the States. An effort was made to have the Act of Congress declared *ultra vires* and the matter was pending in the Supreme Court of the United States at the time the above Treaty was ratified. There is, consequently, now no doubt as to the right of Congress to enact such legislation, if in accordance with the Treaty. Since the enactment of the above mentioned legislation, which took effect on the 1st day of October, 1913, there has been a noticeable increase, judging from reports, in the number of wild ducks in the Central and Western States, many of these birds now nesting there and rearing their broods in those States, where formerly they were driven by the spring shooters into Canada. For one or two years there appeared to be fewer of these birds breeding in Alberta, but for the past year or two there has been no scarcity. This is proof satisfactory to any person that the shooting of birds in the spring of the year undoubtedly tends to lessen their numbers: consequently no bird or birds, which it is the wish of any country to preserve, should be hunted during the breeding season.

BIG GAME.

As previously stated, the open season for big game was not as favorable for hunters as that of previous years. Below is a statement showing the number of big game animals killed each year from 1907 to 1916 inclusive:

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
Antelope	49	45	89	126	101	105	119	..	..	..
Moose	14	37	86	184	305	425	865	1335	1116	849
Caribou .....	..	..	5	8	30	40	56	78	34	28
Mountain Sheep	..	..	40	54	49	90	65	78	110	83
Mountain Goat	..	..	38	46	56	58	42	61	40	26
Elk .....	..	..	..	7	..	..	..	..	1	..
Deer	59	125	299	540	619	768	908	1388	692	560

This does not show the total game killed, as practically no returns are available from the districts north of the 55th parallel.

FUR-BEARING ANIMALS.

Muskrat, mink, fisher and marten vary little in numbers from previous years.

Beaver are on the increase. The policy adopted in 1915 of allowing, under special permit, farmers and others who are suffering damage or inconvenience through the work of beaver, to either open up the beaver dams or trap the beaver as the circumstances warrant, has proven satisfactory. All pelts so taken are held until inspected and stamped, when they become the property of the owner of the land.

Foxes are somewhat less plentiful than in former years, owing to the scarcity of rabbits.

SALE OF GAME.

As in previous years, a number of Game-dealers' and Market-hunters' Licenses were issued, which resulted in the killing of a large number of ducks, the result being that at many of the lakes where market-hunters are operating the shooting was spoiled for the true sportsman.

The following table shows the number of game-birds and big game animals marketed, as shown by returns of Game-dealers and Market-hunters from 1913 to 1916 inclusive:

	MARKET-HUNTERS				GAME-DEALERS			
	1913	1914	1915	1916	1913	1914	1915	1916
Deer	7	14	5	..	6	18	6	1
Moose	43	34	17	10	23	39	20	17
Caribou ...	3	1	..	1	3	..	..	1
Geese	56	25	..	29	76	..	..	..
Swans .....	..	..	..	..	1	..	..	..
Ducks	15,339	3,892	7,394	9,973	16,564	3,497	5,940	11,481
M't'n Sheep	..	2	..	..	..	..	..	1

BRANDING GAME-HEADS.

Section 11 of the Act requiring the branding of game-heads before buying or selling shows the following results:

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
Mountain Sheep	216	2	9	11	2	6	4	4	15	8
Mountain Goat	62	..	1	1	1	2	2	2	..	..
Elk	41	3	4	2	2	1	..	..	1	3
Moose	39	29	33	32	40	40	48	42	30	22
Caribou	16	6	6	2	3	3	2	5	1	1
Deer	142	15	26	26	40	40	24	32	15	12
Antelope	95	5	..	3	3	3	3	10	..	..

LICENSES AND PERMITS.

Owing to the continued financial stringency, as well as to the absence of a great number of sportsmen who have enlisted with the Overseas Battalions, there has been a decrease in the number of game licenses sold as compared with 1915.

There has been a steady falling off in the number of Residents' Bird Game Licenses since the beginning of the war. In 1913 there were 13,021 Residents' Bird Game Licenses sold; the number dropped to 9,674 in

1914, to 7,493 in 1915 and to 6,549 in 1916, the latter being the smallest number sold since the legislation requiring residents of the Province to purchase Bird Licenses was adopted. The first year this was effective there were 7,452 licenses sold. In the case of Resident Farmers' Licenses, the largest number sold in any year was in 1914, when 5,982 persons purchased the Resident Farmers' Big Game License. In 1915, 5,015 Farmers' Licenses were purchased, and in 1916, 3,439. With respect to Residents' Big Game Licenses, only 714 were purchased in 1916, as against 1,378 in 1913, 1,319 in 1914, 912 in 1915. There has also been a large falling off in the number of export permits in 1914, 120 permits, with fees amounting to \$13,875.00; in 1915, 121 permits, with fees amounting to \$3,766.00, and in 1916, 57 permits, with fees amounting to \$451.50. 1914 being the year in which so many foxes were exported under permits accounts for the large revenue received from this source.

The following table shows the number of licenses and permits sold each year from 1907 to 1916 inclusive:

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
Gen. Game Licenses ...	4	7	17	24	24	28	32	25	32	32
Bird Game Licenses ...	..	..	3	3	67	67	68	34	49	60
Residents' Big Game...	446	529	1162	1997	813	1043	1378	1319	912	714
Res. Far. Big Game ...	..	..	..	..	2118	2917	4260	5982	5015	3439
Res. Bird Game .....	..	..	..	..	7452	9519	13021	9674	7493	6549
Guide's Licenses	6	3	7	8	13	21	24	14	16	18
Camp Helper's	1	1	1	4	5	5	5	1	6	1
Game Dealer's	12	23	39	30	16	26	23	39	29	34
Market Hunter's .....	..	..	..	..	60	75	169	125	52	58
Permits to Export	15	17	19	35	24	27	38	120	121	57
Permits to Collect	6	6	16	23	7	7	2	561	5	2
Trappers' Licenses ...	6	4	1	10	14	26	46	..	2	6

CONVICTIONS AND FINES.

With fewer hunters the result has been fewer convictions. The different offences are classified as follows and cover the years 1908 to 1916 inclusive:

	1908	1909	1910	1911	1912	1913	1914	1915	1916
For Hunting on Sunday	12	4	4	9	..	7	19	7	9
For Hunting in Close Season ..	11	36	29	23	6	11	21	15	7
Buying and Selling Unbranded Heads	8	6	3	1	..	2	1	2	5
Hunting Without a License ...	7	6	14	17	1	6	20	15	22
Taking Females .....	..	..	..	4	..	2	5	10	7
Selling Without a License	7	7	..	1	2	..	..	6	8
Miscellaneous Offences	4	2	9	7	71	93	52	33	22

REVENUE FROM GAME.

With the continuation of the war and the enlistment of so many citizens who were hunters resulting in the sale of a much smaller number of licenses than in previous years, I am compelled to report that the expenditure for the year 1916 exceeded the revenue to the extent of \$2,836.29. This is the first deficit since the year 1909. There is still, however, a surplus over and above expenditure for the years 1906 to 1916 of \$45,827.19.

The following table will show the different kinds of licenses and permits issued and the revenue derived therefrom, as well as the expenditure for game protection, for the years 1906 to 1916 inclusive:

REVENUE FROM GAME MONEY COLLECTED.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
General Game . . .	\$ 9.00	\$ 175.00	\$ 425.00	\$ 600.00	\$ 600.00	\$ 600.00	\$ 700.00	\$ 800.00	\$ 625.00	\$ 800.00	\$ 800.00
Bird Game . . .			45.00	45.00	335.00	335.00	335.00	340.00	170.00	245.00	300.00
Trapper . . .	10.00	10.00	10.00	100.00	140.00	140.00	260.00	460.00	.....	50.00	150.00
Res. Big Game	115.00	1,322.50	2,907.00	4,392.50	2,032.50	2,032.50	2,607.50	3,445.00	3,297.50	2,280.00	1,785.00
Res. Bird Game					2,118.00	2,118.00	2,917.00	4,260.00	5,982.00	5,015.00	3,439.00
Guide's	30.00	15.00	25.00	40.00	65.00	9,315.00	11,898.00	16,276.25	21,766.50	16,859.25	14,735.25
Camp Helper's . .	2.50	2.50	2.50	10.00	25.00	25.00	105.00	120.00	70.00	40.00	15.00
Game Dealer's . .	120.00	250.00	300.00	300.00	160.00	160.00	260.00	230.00	390.00	290.00	340.00
Quail Hunter . . .					300.00	300.00	375.00	845.00	625.00	260.00	290.00
Permits to Export	171.00	42.00	50.00	76.00	41.00	41.00	65.00	78.50	13,875.00	3,766.00	451.50
Permits to Collect	65.00	50.00	50.00	45.00	35.00	35.00	35.00	10.00	2,905.00	25.00	10.00
Birds	2,158.00	240.00	3,140.00	295.00	323.00	323.00	246.00	328.00	343.00	265.00	194.00
Game Capt. Game			101.00	108.33	30.00	30.00	45.00	20.00	2,920.66	7.46	40.00
Fine	154.00	337.50	447.50	328.00	700.00	700.00	861.00	1,667.53	1,759.93	1,417.78	1,400.90
Total Revenue . . . \$	145.00	\$3,948.50	\$4,793.50	\$6,940.25	\$6,219.50	\$20,734.50	\$28,905.28	\$54,628.59	\$31,335.49	\$23,983.45	
Total Expenditure \$	1,920.69	\$2,249.62	\$4,325.60	\$5,579.90	\$4,765.20	\$8,935.00	\$14,042.17	\$19,164.51	\$30,845.98	\$29,688.86	\$25,819.44
Surplus	\$1,731.88										
				\$2,174.05	\$7,284.50	\$7,284.50	\$6,692.33	\$9,740.77	\$23,783.51	\$1,646.63	
Deficit	\$1,784.69		\$1,819.10	\$786.40							\$2,836.29

Surplus over and above expenditure for years 1906 to 1916, \$45,827.19.

The following licenses were issued to Treaty Indians free of charge on the strength of a certificate from their Agent, as provided for by Section 19 (c) of the Game Act:

Resident Farmer's Big Game Licenses 278

DEMONSTRATION TRAIN.

Following up the success in connection with the car containing mounted specimens of Alberta animals and birds in 1915, a much more extensive exhibit, occupying the whole of one car, was set up in 1916. The attendance and interest shown were much greater than in the previous year, and results were, accordingly, much greater. Many persons who had previously taken no interest in connection with the preservation of game or the protection of song and insectivorous birds, have, through the influence of the exhibit since taken considerable interest in seeing that the birds in their district, to some extent at least, are protected. The fact of the exhibit being entirely of Alberta origin caused many to take a greater interest than they otherwise would have done.

Respectfully submitted,

BENJ. LAWTON,

Chief Game Guardian.

MUSEUM.

SIR,—I have the honor to submit herewith the report of the Museum.

Following the policy of previous years, a vote of \$500 was made by the Legislature to the museum to be used in securing mounted specimens of animals, birds and game-heads. Progress, however, with this amount is comparatively slow, but it is believed the money was spent to the best possible advantage. The space in the office allotted to the museum is too limited to display the specimens properly.

An exhibit was prepared from the museum for the Demonstration Train which toured several railway lines of the Province this year. The exhibit enabled persons to familiarize themselves with Alberta animals and birds. School-children were very much interested; many made notes for use in connection with their class-room studies of animals and birds. Photographs, paintings or lithographs do not convey to the mind the proper idea of the natural appearance of animals or birds like properly mounted specimens.

Respectfully submitted,

BENJ. LAWTON,

Chief Game Guardian.

WOLF BOUNTY ACT.

SIR,—I have the honour to submit herewith my report in connection with the administration of The Wolf Bounty Act for the year 1916.

Prior to May 16th, 1916, no bounty was paid on any species of wolf. New regulations were then enacted which would prevent, as far as possible, the payment of bounty where it was not justifiable. It is quite clear that where inspectors were asked for bounty for the pelts of extra large

brush-wolves (prairie-wolf or coyote) a mistake as to species might easily be made and the warrant be issued for a timber wolf. The regulations which were adopted on the 16th of May, 1916, eliminated any possibility of this. As the regulations took effect late in the spring and, consequently, the provisions were not widely known for some weeks, fewer persons claimed bounty this year than in former years.

The price realized by trappers for the pelts of the prairie-wolves induces many persons to hunt during the winter when the fur is at its best. During the spring and summer, however, those interested in trapping will not destroy them, because they figure by so doing their income from the sale of pelts the following winter would be reduced. All pelts were sold by tender. The average price realized was \$6.52, the lowest \$1.50, the highest \$25.00. Some of the skins were from animals killed in summer and early fall and were of little value.

Many complaints were received during the year regarding the depredations of the prairie-wolves (coyotes). This animal causes the farmer of the Province more damage than all the other species of carnivorous animals combined. Many farmers lost all their poultry, others lost their sheep, pigs and calves, and one or two reports were received to the effect that children had been followed and attacked while returning from school.

The erroneous impression prevails that prairie-wolves are more numerous now than in former years. The wolves are not more plentiful, they are merely more in evidence in the settled districts. Rabbits are scarce and the wolves are compelled to enter the settlements in search of food. This is not necessarily the case with the grey or timber-wolf, which may, and does, kill moose, deer and caribou. The prairie-wolf, however, is not as successful at hunting big game as the grey-wolf, and therefore looks for an easier method to obtain a livelihood at the farmers' expense. It is regrettable that he takes such a heavy toll from the poultry and stock raisers because he is able to destroy gophers, mice, moles, etc., and if he would limit his diet to these animals, he would be of invaluable assistance to the grain-grower in protecting his crops from the ravages of these pests. Having once tasted domestic animal or fowl, the prairie-wolf will continue to visit the farm-yard until he is destroyed. It is usually during the months of June and July that the greatest loss is suffered. At this time, the parents are more rapacious than at other seasons of the year, being compelled to secure animal food for their young.

At this season, it is comparatively easy to locate the dens in the early morning while the dew is on the ground. By using a saddle horse and riding along a ridge or any high ground, the chance of finding the trails is much better than by following the low land. Where trails intersect, it is reasonable to assume that the den is not far distant. Wolves usually select rough, rocky or hilly country for their dens; frequently they are found along rivers or small streams. The young are born in May and leave the den in August and are compelled to obtain their own living by September.

TRAPPING AND POISONING.

The wolf is one of the most difficult of carnivorous animals to trap. It is more difficult to take than the fox, which is considered by many to be the most cunning of animals.

Cases have been reported where prairie-wolves have been caught in snares set for that purpose. However, for trapping these pests it is advisable to use a No. 4 double spring trap for wolves, and a No. 3 for coyotes, with an extra stout chain and swivel. If in a timber-wolf country, it will be better to use the No. 4 trap as this will hold either, and may prevent the loss of the trap. If possible, attach the trap to a drag. If it is found necessary to stake the trap, it may be done by driving the stake just below the surface of the ground and adjusting it in such a manner that the chain will not slip off. If possible, the trap should be placed in such a position that it can be approached from one direction only. It should be near their run-way and completely hidden. This may be done by covering the trap with a piece of paper, pouring on the paper sufficient fine dirt to cover it, and finally sprinkling with water, thus giving a natural appearance to the place. Care should be taken to leave the ground as though it had not been disturbed.

Wearing scented gloves and rubbing the soles of the shoes with tainted meat will prevent suspicion due to any human scent being left behind. A piece of old sacking or a cow-hide may be used to stand on or to pile the loose dirt on while burying the trap. Meat baits alone have not proved successful in capturing these suspicious and cunning animals. Of all the scents used, the fetid bait has proved the most successful. This is prepared by putting a piece of raw meat in a wide-mouthed bottle, placing it in a warm, shady place, allowing it to stand until the odor has become almost unbearable, and adding a quart of lard oil and one ounce of tincture of musk to each half pound of meat. Pour some of this on the ground in such a position that the animal to be trapped cannot get to it without first crossing the trap. This bait is very attractive to domestic animals, and care should be taken that they cannot gain access to it.

Poisoning is a very common and successful method of destroying these pests. Great care, of course, must always be taken that domestic animals do not have access to poisonous baits. Used in proper quantities, pure sulphate of strychnine has proved the most effective poison. For coyotes, 2 grains, and for wolves, 4 grains, is the most effective dose. It should be enclosed in capsules of 2 and 3 grain capacity respectively, and every trace of the contents wiped from the outside. Each capsule should be inserted into a piece of beef suet about the size of a walnut; never use lean meat, as the juice therefrom will dissolve the capsule and free the poison. The baits may be carried in a tin can or pail and dropped while riding along on horseback, care always being taken that the hands or the clothing do not come in contact with the bait. After deciding where these baits shall be placed, the trail may be scented by dragging an old bone or piece of meat which has been previously scented. The baits may also be placed near a carcass or along a trail frequently used by the wolves. Hunting with dogs has proved more successful with coyotes than the timber-wolf. The large greyhound or wolfhound, which runs by sight and hunts in pairs, will readily overtake and kill the coyote, but would be no match for a full grown timber-wolf. By watching at the den in the early morning or late evening during the breeding season, the hunter may secure one or both of the parents.

Respectfully submitted,

BENJ. LAWTON.

Chief Wolf Bounty Inspector.

II.—PREVENTION OF PRAIRIE FIRES.

I am pleased to again report that very few, if any, destructive fires occurred in the Province of Alberta during 1916. The very wet spring and fairly wet fall undoubtedly prevented fires from running as extensively as they do some seasons. The railway lines throughout the province were thoroughly inspected, as required by the Board of Railway Commissioners, to ensure the right of way being kept free from inflammable matter; and the required fire guards constructed and kept in order. This entailed considerable work, but the results justified the expenditure of time and money, as in the past many of our most destructive fires were caused by sparks from railway engines.

It will no doubt be of interest, especially to those living in the vicinity of railways, to know what the regulations relating to fire guards are. Although there are slight changes, from year to year, those which were in effect in 1916 are given below:

BOARD OF RAILWAY COMMISSIONERS FOR CANADA

FIRE INSPECTION DEPARTMENT, OTTAWA.

Wednesday, the 26th day of April, 1916.

FIRE GUARD REQUIREMENTS.

To—

The Canadian Pacific Railway Company,
 The Canadian Northern Railway Company,
 The Grand Trunk Pacific Railway Company,
 The Great Northern Railway Company,
 The Edmonton, Dunvegan & British Columbia Railway Company.

In accordance with the terms of subsection 4 of section 298 of the Railway Act, and Regulation 8 of General Order No. 107 of the Board of Railway Commissioners, you are required to establish and maintain fire guards on both sides of the right of way along the route of your railway, under the jurisdiction of the board, in the Provinces of Alberta, Saskatchewan and Manitoba, as follows:

Section A.—Grain Stubble Lands.

Clause 1.—Section 297 of the Railway Act requires that "The company shall at all times maintain and keep its right of way free from dead or dry grass, weeds and other unnecessary combustible matter." As to portions of lines where the right of way adjoins lands devoted to grain crops, this requirement is hereby extended to include the strip between the right of way and the edge of cultivation, provided that this requirement shall not apply more than ten feet outside the right of way on private land, and that it is not necessary to cut brush or weeds or to clear accumulations of debris, such as tree stumps, fallen timber, etc., on this strip.

Clause 2.—You are required to provide for the ploughing of fire guards through grain stubble lands adjacent to your lines wherever such action is necessary in the judgment of the owner or occupant of such land, and where such owner or occupant, having been notified by the railway company, as prescribed in fire guard requirements dated May 11, 1914, shall take the initiative and plow, immediately following the cutting of the grain, such fire guard, four feet in width at a distance of approximately one hundred feet from the main track, for a remuneration of \$1.75 per lineal mile of four-foot plowed fire guard, such amount to be paid by the company within forty days after the submission by the land-owner or occupant of written statement of account to the railway company, it being understood that the minimum amount to be paid in any case shall be one dollar.

Clause 3.—It is clearly understood that nothing contained in this letter, nor any action to be taken under it, shall be construed as in the slightest degree affecting the statutory responsibility of the company for the payment of damage claims on account of fires.

Section B.—Cultivated Hay Lands.

Clause 1.—This classification shall include lands cultivated and sown or planted to tame grasses, such as timothy, brome, clover, alfalfa, etc.

Clause 2.—On such lands, provision shall be made for the plowing of fire guards wherever such action is necessary in the judgment of the owner or occupant of such land, and where such owner or occupant shall take the initiative and plow such fire guard four feet in width at a distance of approximately one hundred feet from the main track for a remuneration of \$1.75 per lineal mile of four-foot plowed fire guard, such amount to be paid by the company within forty days after the submission by the land owner or occupant of written statement of account to the railway company, it being understood that the minimum amount to be paid in any case shall be one dollar.

Clause 3.—In case the owner or occupant of land in this classification fails to plow fire guards as above provided, and refuses to permit such fire guards to be plowed by the railway company, the company may, if it considers such action necessary for the protection of its own interests, report the matter to the board with a request for authority to enter upon such lands for the purpose of plowing such fire guards. Each such request shall state the name and post office address of the land-owner or occupant in question, and the description of the land by legal subdivision and railway mileage. Pending the receipt of authority from the board, the company shall in such cases refrain from entrance upon such lands for the purpose of fireguarding same.

Clause 4.—The ploughing of fire guards is not required on lands devoted to non-combustible crops.

Section C. Fenced Grazing Lands.

Clause 1.—This classification shall include uncultivated fenced lands, which are used for the purpose of grazing, or from which wild hay is cut.

Clause 2.—On such lands fire guards shall be constructed or maintained in the form of a plowed strip not less than sixteen feet in width. Where such fire guards have been constructed in the past at a distance of from 150 to 250 feet from the track, they shall be maintained in the same location; otherwise, construction shall be at a distance of approximately 200 feet from the main track, or as close a distance to 200 feet as the nature of the country will permit.

Clause 3.—All dead or dry grass and other unnecessary combustible matter shall be burned or otherwise removed from the right of way. Burning outside the right of way is not required under this classification.

Clause 4.—Wherever the owner or occupant of land in this classification objects to the construction or maintenance of fire guards as above prescribed, the company shall refrain from doing such work, but shall immediately report the matter to the board, stating name and address of such owner or occupant, the description of the land by legal subdivision and railway mileage, and whether the company desires the permission of the board to enter on such land for the purpose of constructing or maintaining such fire guards notwithstanding such refusal by owner or occupant.

Section D.—Wild Lands.

Clause 1.—This classification shall include uncultivated unfenced lands, and also uncultivated fenced lands not used for grazing purposes and from which wild hay is not cut.

Clause 2.—On such lands, fire guards shall be constructed or maintained in the form of a plowed strip not less than sixteen feet in width. Where such fire guards have been constructed in the past at a distance of from 200 to 400 feet from the track, they shall be maintained in the same location. Otherwise, construction shall be at a distance of approximately 200 feet from the main track or as close a distance to 200 feet as the nature of the country will permit.

Clause 3.—All dead or dry grass and other unnecessary combustible matter shall be burned or otherwise removed between the fire guard and the track. Where the plowing of fire guards is impracticable on account of the ground being too stony or rocky, or too hilly or broken to plow, the dead or dry grass and other unnecessary combustible matter shall be burned off on a strip extending 200 feet from the track, except where a satisfactory showing shall be made that no fire hazard exists.

Clause 4.—Under the provisions of the Railway Act and of the board's order, the consent of the owner of private land coming under this classification is not essential in connection with either the plowing of fire guards or the burning off of grass between the fire guard and the main track as above prescribed.

Section E.—Additional Provisions.

Clause 1.—Where there are alternating classifications of lands, every effort shall be made to have the fire guards connected to make an unbroken continuous fire guard. Where this is not practicable, the ends of the constructed portions of the fire guard, irrespective of the classification, shall be turned in to the right of way.

Clause 2.—The construction of fire guards shall be completed, as above specified, before the grass shall have become inflammable, and in any event not later than the 15th day of August, 1916, except as to grain stubble and cultivated hay lands, where the requirements for these classifications shall govern.

Clause 3.—After fire guards have been constructed they shall be maintained in an efficient condition.

Clause 4.—The provisions of these requirements shall apply to the portions of the line under construction in the provinces named, the same as to portions under operation, and fire guards shall be constructed in accordance with such provisions as steel is laid.

Clause 5.—The foregoing requirements shall apply to all lines in the provinces named over which the board exercises jurisdiction, except those parts for which exemption has been requested and approved by the chief fire inspector for the board. Requests for exemptions, or alterations to approved exemption charts, shall be submitted at the earliest practicable date, but not later than June 10, 1916. When exemption charts have been submitted in accordance with the 1915 requirements and such exemption charts have been approved by the chief fire inspector for the board, they shall constitute a record of lands where it is impracticable or unnecessary to construct fire guards. If, however, the company finds that alterations to the approved exemption charts are necessary at any time, they shall submit on approved form such suggested alterations, in duplicate, and if after inspection by an authorized inspector of the board the alterations are approved, the chief fire inspector will approve the request for exemption and direct that the chart on file in the company's office be altered accordingly.

Clause 6.—The following reasons will be considered in connection with requests for exemptions from the necessity of plowing fire guards: Ground too stony or rocky or too hilly or broken to plow; timber or scrub; poplar (where plowing impracticable); swamp, muskeg or sloughs (where permanently wet and too large to plow around); cities and villages (only where plowing is impracticable); climatic conditions; general adverse public sentiment; and the following where width and location are such as to constitute an efficient fire guard: Irrigation canals, rivers, ditches, lakes, creeks, graded roadways or other railway grades parallel to the company's tracks.

Clause 7.—The company shall submit to the chief fire inspector for the board at Ottawa, in duplicate, not later than December 31, 1916, an annual fire guard statistical report on approved form.

Very truly yours,

Clyde LEAVITT.

Chief Fire Inspector, B. R. C.

Note:—For convenience, the following outline is appended to facilitate reference to the above requirements:

Cultivated land—

Grain stubble. See Section A.

Cultivated hay land (sown or planted to tame grasses). See Section B.

Uncultivated land—

Fenced:

Grazed. See Section C.

Wild hay cut. See Section C.

Not grazed. See Section D.

Wild hay not cut. See Section D.

Unfenced. See Section D.

The convictions reported and the total penalties imposed for the years 1907 to 1916, inclusive, are as follows:

Year	No. of Convictions reported		Average Fine
		Total	
1907	33	\$ 741.00	\$22.45
1908	105	1,570.00	14.95
1909	94	1,796.00	19.10
1910	247	4,247.38	17.20
1911	33	565.00	18.25
1912	56	1,008.00	18.00
1913	48	984.75	20.52
1914	89	1,395.93	15.68
1915	39	681.16	17.47
1916	113	2,121.19	18.77

Respectfully submitted,

BENJ. LAWTON.

Chief Game and Fire Guardian.

REPORT OF THE CROP STATISTICIAN

SIR.—I have the honour to submit herewith my report on the crop statistics of the province, the same being for the year 1916:

WEATHER CONDITIONS AND STATISTICS.

The following tables regarding the weather conditions prevailing during the year have been obtained from the Dominion Meteorological Office at Toronto and are the work largely of a corps of voluntary observers throughout the province.

MONTHLY WEATHER REPORT FOR 1916.

January.

Edmonton.—A month of continuous low temperatures with a high percentage of cloud. The monthly snowfall has been above the average. Prevailing northwest winds, of force moderate to fresh, causing considerable drift on trails; average depth on levels, 9 inches; lakes and rivers solid and safe; sleighing excellent; stock reported wintering well; outdoor operations very slack. Calgary.—Seven inches of snow on the ground; extremely cold month; hard on cattle. Lethbridge.—Month has been coldest since observations taken here; good sleighing; live stock reported doing well; abundance of feed in sight, although demand for hay improving; estimated to be thirty to forty per cent. wheat still in farmers' hands. Medicine Hat.—Steady cold for greater part of the month; a local fog off and on during the 11th, 12th and 13th; and but 75 hours of bright sunshine during the month, yet the air was bracing and healthful. Stock pulling through well; plenty of feed; good sleighing with rather heavy roads; the farmers all feeling good.

February.

Edmonton.—Month opened with continued cold weather until 13th, when a marked change set in with a steady and moderate southwest wind. Spring-like conditions prevailed with bright sunshine and comparatively high temperatures, and the snow practically disappeared with the exception of drifts. Trails throughout the province are soft and broken. From the 26th to 29th cold northerly and easterly winds with snowflurries brought a renewal of winter conditions with falling temperatures; 140 hours' bright sunshine. Calgary.—Two weeks of cold and two weeks of springlike weather, when ice began to move. Lethbridge.—Cold wave broken by chinook wind on the 13th. Extremely mild weather since; live stock in range district were suffering greatly before warm weather, due largely to depth of snow and where stock had access to feed, lack of water. Medicine Hat.—Range stock suffered considerably during first half of month owing to protracted cold spell; farmers' stock well provided for. A chinook setting in on the 13th, continuing to the 27th, cleaned all the snow away and weather was quite springlike. Ice broke up on the Saskatchewan River on the 20th. Wild ducks are reported to have appeared in small flocks during the thaw. The general condition of the district is good.

March.

Edmonton.—Bright sunshine, 167 hours; ground bare. Month opened with low temperatures and cold variable winds until the 6th, when milder conditions set in. Rising temperatures and light southeast winds prevailing with low percentage of cloud. The monthly precipitation was above the average though the snow had disappeared by the 31st. Trails are soft and broken, rivers opening up with large reaches of open water. Month closes with signs of spring and farming activities started in Southern Alberta. Calgary.—No snow on ground; ice in river melting fast. Ground should be ready for seed early; a heavy rain on the night of the 31st. The depth of snow at different points in Alberta and the Mountains at the end of the month was, Blairmore, none; Cowley, none; Nanton, none; Banff, none, except in shaded places; Lake Louise, 30 inches; at summit on main line of the C.P.R., 48 inches.

Lethbridge.—Mean temperature, 42; precipitation, 0.90 inch. The weather during the month was mild and very favorable for range stock. Threshing delayed from last fall resumed in some cases. Work on land became general about the 20th, but has been interrupted since by storms; no seeding done yet. Medicine Hat.—The weather on the whole was chilly and cold with very little precipitation, but fine for stock, as they could pasture outside on prairie free from snow. Wild ducks are getting plentiful. Stock running out all winter have come out rather thin where no fodder was provided. In many places farmers have been working on the land, but so far no seeding is reported. In some sheltered places the grass is showing a little greenness.

April.

Edmonton.—Month opened cold and clear; spring conditions late; river ice moved out on the 17th; migratory birds north-bound on the 10th; light night frosts and moderate winds throughout. No interference with farming activities; seeding about finished; cold with snow and rain the last few days. Calgary.—Seeding all through; very strong wind during the month; birds flying north. Lethbridge.—Heavy drying winds have been very prevalent during April, so present storm very opportune. Seeding is well advanced, 80 to 90 per cent. wheat in; only unfavorable conditions in situation results from small acreage summer following last year, and consequently large proportion of crop being stubbled in. Medicine Hat.—Grass coming slowly; farmers busy seeding, soil in splendid condition; range stock have come through the winter fairly well; most of the sloughs on the prairie full of water, this has not occurred for many years.

May.

Edmonton.—Month throughout cloudy and cool with northwesterly winds prevailing; precipitation plentiful; crops show excellent prospects; spring wheat very promising; month closes cold with slight snowfall and heavy showers; rivers rising. Calgary.—Very heavy rains throughout the month; crops are in good condition, but warmer weather needed. Medicine Hat.—An unusual amount of rain for the month; seeding all done; grass growing; plenty of feed for stock. District in general in a prosperous condition. We had eighteen days on which it rained more or less. Lethbridge.—During first part of month strong west winds blew almost continuously, damaging crops by drifting surface necessitating re-seeding in some cases. Crops two weeks behind last year; otherwise prospects excellent.

June.

Edmonton.—The month was for the most part warm with 264 hours of bright sunshine. The rainfall in northern districts was slightly in defect, but rain during the last few days brings it to nearly average. Crop reports good but growth short. River six feet above normal level. Calgary.—Crops coming on fine; rivers rose very rapidly, nearing flood stage; snow melting in mountains very fast. Lethbridge.—Plenty of moisture in the soil and crop outlook is excellent, being fully as good as last year except that stage of development is from one to two weeks later. Medicine Hat.—Crops looking well, but a little late; splendid grass; plenty of hay in sight.

July.

Edmonton.—Total hours of bright sunshine, 248.7. The month opened cloudy with high temperatures and light thunderstorms; precipitation below average; Alberta crop reports very good; northwesterly winds prevailing; river normal; month closed very warm with continued bright sunshine. Lethbridge.—General crop conditions in Southern Alberta good. Wheat harvest will probably begin by the 20th. No rust reported. From present outlook believe crop will average twenty-five bushels or better. Indications point to an acute labor situation. Calgary.—Crops all heading out, but need warm weather. Crop is a week behind that of last year. Medicine Hat.—The weather during the month was ideal for crops, barley and fall wheat has been started. Maximum temperature did not reach as high as customary for July. Crops promise well. Thunderstorms were more common than usual but little or no damage to crops by hail.

August.

Edmonton.—Fair average sunshine. Hours of bright sunshine, 236. Precipitation well over normal. First light frost on the 10th, no damage except to light vines. Harvesting in full swing, crops very promising; river normal; month closed cold and wet. Calgary.—Fifty per cent. of grain cut; a few more weeks of good weather needed. Experimental Farm, Lacombe.—Cold, wet weather responsible for general delay in maturing of crop and at close of month only barley cutting general, wheat and oats beginning. Frost the night of the 10th injured some crops in most localities over an area of one hundred and fifty square miles, in which districts grade wheat will be lowered. Experimental Farm, Lethbridge.—Mean temperature for month 60°, being six and a half degrees lower than last year. Precipitation 2.97 inches, being two inches more, resulting in harvest being one week later. Grain cutting general, no damage from frost in wheat areas, no appreciable damage from rust. Medicine Hat.—Harvesting well under way; no frost damage reported. A splendid yield expected from all staple cereals. A heavy windstorm passed over the district on the 1st, but no damage of any consequence reported.

September.

Edmonton.—Hours of bright sunshine, 175. Month opened cloudy, cold and heavy rain and high percentage of cloud, closing cold with hail and snow flurries. Fair average sunshine; first light frost on the 14th; heavy on the 30th; killing light vines; precipitation above normal; strong northwesterly winds prevailing. Calgary.—Very cool month, first frost the 14th; very good crop in Southern Alberta; leaves are falling. Medicine Hat.—Harvesting all completed, threshing in full swing, grain yielding well and good samples. Little or no injury by frost or hail. Help for threshing rather scarce. Stock in the pink of condition, good prices are being obtained for all kinds of produce.

October.

Edmonton.—October opened cloudy with heavy frost and light snowfall. Good average bright sunshine, southwesterly winds prevailing with high clouds. River rose 2 feet 6 inches on the 19th; normal and clear from the 20th to 31st. Wheat still stacked very good; oats very light; threshing held back for want of labor; 124 hours sunshine. Medicine Hat.—The early part of the month was less or more broken and threshing was delayed, but later the weather was favorable and farmers getting along fine. Good yield and samples are general. There is so much grain yet to thresh that Sundays are not considered in most sections of the district.

November.

Edmonton.—November opened mild with slight rain and snow; sudden drop in temperature in middle of the month; precipitation light; low percentage of cloud; river partly closed by ice by the 24th; still large open reaches; month closes cold and windy; all wheel traffic; reports of hail in the St. Albert district destroying oats and barley. Calgary.—Moderate month; little precipitation; no snow on ground; rivers frozen across. Medicine Hat.—Threshing nearly completed. The snowstorm of the 9th, 10th and 11th did not delay work much, and some farmers threshed right along except for a day or two; stock well provided for; plenty of fodder stored to carry through winter; not much fall ploughing, farmers too busy delivering grain to the elevators; business in the city exceptionally active.

December.

Edmonton.—Month opened mild and cloudy; sunshine, 65 hours, which is much below normal. Temperature dropped below zero end of first week, continuing low for the balance of the month. Snowfall well above average. Sleighing commenced during second week; farming activities over; stock reported doing well in the open; river completely frozen over, traffic crossing on the 11th; depth of snow on ground at the end of the month, four inches. Calgary.—Last two weeks of the month very cold, a strong and warm chinook blowing since the 29th. Medicine Hat.—Month rather cold, unusually so for this district. Some straggling patches of grain reported yet unthreshed, but on the whole the season has ended satisfactorily; farmers very busy delivering grain at elevators; stock reported in best of order.

HOURS OF SUNSHINE RECORDED FOR 1916.

STATION	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Edmonton	91	140	157	219	230	264	248	237	175	124	116	65
Lethbridge	98	120	148	225	230	244	336	307	208	169	170	87
Lacombe	89	132	129	201	179	198	228	253	176	139	122	94
Medicine Hat	75	116	153	215	242	250	326	309	206	150	115	74
Fort Dunvegan	81	81	103	183	...	...	...	...	...	...	...	20
Fort Vermilion ..	84	161	156	247	275	368	270	318	196	112	63	59
Vermilion ..	..	...	...	182	199	262	237	242	189	127	95	70

PRECIPITATION—(Continued).

STATIONS	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year	Total
Clareholm	0.73	0.55	0.95	0.73	3.26	1.78	1.75	4.70	4.51	1.26	0.30	0.50	1916	21.02
Expanse Coulee	0.58	0.71	0.25	0.19	2.35	3.17	4.69	1.70	3.99	1.11	0.30	0.40	1916	19.44
Foremost	1.00	.....	.....	0.17	2.61	3.05	3.80	3.94	.....	.....	.....	.....	1916	13.57
Gleichen	1.00	.....	.....	0.38	2.50	2.50	3.05	3.25	1.55	1.10	0.30	0.30	1916	15.93
Lethbridge Experimental Farm	1.00	1.11	0.91	0.46	3.77	3.54	3.33	2.97	4.76	2.85	0.48	0.58	1916	25.88
Lundbreck	1.38	1.35	1.04	0.72	3.41	2.96	2.92	2.92	2.49	2.25	1.22	0.70	1916	22.47
Macleod	1.10	0.30	0.63	0.51	2.60	2.59	4.65	5.03	4.42	1.29	0.88	0.45	1916	24.45
Medicine Hat	0.57	1.21	0.29	0.18	3.73	4.09	2.70	1.69	1.11	0.57	0.55	1.25	1916	17.90
Milk River	1.50	0.90	0.20	0.45	3.09	3.43	.....	2.11	2.84	.....	1.10	.....	1916	15.62
Okotoks	0.30	0.30	0.46	0.64	4.45	1.53	2.50	2.59	1.04	1.05	0.28	0.40	1916	15.53
Pekisko	1.70	1.05	1.25	2.59	6.03	2.63	2.37	3.77	4.58	1.88	1.72	0.35	1916	32.18
Pincher Creek	1.38	1.50	1.73	0.90	2.98	3.75	2.97	4.03	1.39	2.04	1.52	0.60	1916	24.99
Ronolane	0.60	0.20	.....	0.14	2.33	4.32	4.24	1.68	3.14	1.08	0.29	0.30	1916	18.32
Strathmore	0.30	0.33	0.50	0.44	4.51	2.92	3.21	3.13	.....	.....	.....	.....	1916	14.47
Suffield	0.55	.....	0.43	0.06	4.07	2.60	7.20	1.77	1.18	0.77	0.25	0.70	1916	19.58
Sundial .....	.....	.....	.....	0.26	3.37	1.97	1.68	2.43	2.12	1.10	.....	.....	1916	12.93
Twin Lakes (Kinball)	3.50	2.80	1.10	1.23	4.34	4.85	1.20	3.97	2.12	2.70	2.26	2.16	1916	20.71
ROCKY MOUNTAINS														
Banff	2.85	0.87	1.57	2.48	4.21	2.65	2.74	3.30	1.82	1.24	1.24	0.24	1916	25.24
Lake Louise	2.00	0.88	2.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	1916	5.54
Mountain Park	8.28	1.50	4.08	7.95	5.37	4.41	2.14	.....	.....	.....	.....	0.50	1916	34.50
ATHABASCA RIVER														
Athabasca	1.08	0.30	1.35	0.54	1.16	0.85	.....	0.69	2.51	0.88	0.13	0.58	1916	10.07
Wabasca	0.73	0.05	0.98	1.62	1.44	0.69	3.44	0.24	3.50	0.99	0.10	.....	1916	15.78
PEACE RIVER														
Fort Vermilion, No. 1	0.40	.....	1.00	.....	0.60	2.65	.....	.....	.....	0.98	.....	.....	1916	5.63
Fort Vermilion, No. 2	0.90	0.03	.....	0.09	1.90	1.98	4.04	0.42	1.56	.....	0.28	0.80	1916	12.00
Grande Prairie	1.20	0.30	1.23	1.31	0.42	0.41	3.98	0.47	0.52	0.56	0.20	1.50	1916	12.10

MAXIMUM AND MINIMUM TEMPERATURES FOR METEOROLOGICAL STATIONS IN ALBERTA FOR 1916

STATION		Jan	Feb	Mar	Apr	May	June	July	Aug.	Sept.	Oct.	Nov	Dec
NORTH SASKATCHEWAN RIVER													
Cambridge	{ Maximum...	30	62	51	71	75	79	79	85	78	72	53	39
	{ Minimum...	39	44	36	12	16	24	32	27	18	11	29	43
Cardston	{ Maximum...	24	57	57	73	77	78	90	80	77	70	57	44
	{ Minimum...	44	26	22	18	25	30	40	31	27	19	09	37
Edmonton	{ Maximum...	29	57	57	70	77	77	80	81	79	72	52	43
	{ Minimum...	45	26	20	17	27	29	38	32	29	20	08	37
Estevan	{ Maximum...	28	54	55	75	76	74	86	81	74	69	61	41
	{ Minimum...	41	26	18	19	24	34	40	32	27	18	18	32
Halifax	{ Maximum...	19	45	47	73	76	81	89	81	71	65	51	39
	{ Minimum...	46	28	25	14	17	32	37	29	23	15	18	36
Hartley	{ Maximum...	22	51	54	73	77	76	86	81	77	71	53	47
	{ Minimum...	39	46	20	13	20	30	38	26	26	15	17	45
Leckland	{ Maximum...	23	56	...	...	...	...	...	...	...	...	...	...
	{ Minimum...	49	26	...	...	...	...	...	...	...	...	...	...
Nordegg	{ Maximum...	24	57	59	66	65	76	...	...	69	65	48	40
	{ Minimum...	44	26	32	18	19	27	...	...	24	10	14	27
Rainy	{ Maximum...	24	52	53	74	77	78	85	81	82	73	57	43
	{ Minimum...	56	35	32	12	23	24	40	31	25	16	12	37
Sedgewick	{ Maximum...	13	...	...	...	75	...	89	85	85	70	76	42
	{ Minimum...	55	...	...	...	10	...	20	29	26	19	12	40
Sion	{ Maximum...	30	54	53	68	76	82	82	80	76	67	52	44
	{ Minimum...	54	35	30	15	20	22	27	24	17	08	10	12
Vermilion	{ Maximum...	...	...	...	72	77	80	84	78	77	70	51	31
	{ Minimum...	...	...	...	16	20	31	33	27	17	15	07	36
Wainwright	{ Maximum...	20	47	54	78	77	76	87	84	78	74	62	44
	{ Minimum...	51	33	28	16	21	32	38	27	21	13	15	43
RED OILIER RIVER													
Alix	{ Maximum...	37	65	59	78	81	81	87	85	80	72	58	46
	{ Minimum...	55	33	32	17	24	33	36	30	26	18	17	40
Driftdy	{ Maximum...	30	60	58	70	74	80	84	78	72	76	60	48
	{ Minimum...	42	16	14	20	24	32	38	34	26	18	10	30

MAXIMUM AND MINIMUM TEMPERATURES FOR METEOROLOGICAL STATIONS IN ALBERTA FOR 1916. (Continued)

STATION	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Empress	{ Maximum . . . . .	.....	.....	81	81	87	.....	.....	.....	70	.....	30
	{ Minimum . . . . .	.....	.....	20	26	32	.....	.....	.....	16	.....	37
Hermann	{ Maximum	35	66	71	71	76	81	80	75	74	57	46
	{ Minimum	51	30	22	15	20	31	31	20	11	20	39
Hillstown	{ Maximum	27	64	61	73	73	81	86	75	76	53	46
	{ Minimum	46	26	28	15	23	25	37	27	16	17	35
Jenar	{ Maximum	37	60	69	83	.....	90	98	88	86	.....	55
	{ Minimum	50	43	20	17	.....	35	42	31	22	10	38
Lacombe Experimental Farm	{ Maximum	28	63	60	72	72	78	83	77	75	56	44
	{ Minimum	52	29	28	18	20	29	36	29	23	17	40
Olds	{ Maximum	31	60	60	70	71	70	83	75	70	55	45
	{ Minimum	42	47	18	28	20	32	37	30	23	10	28
Periboo	{ Maximum	22	57	58	74	74	81	90	82	.....	.....	.....
	{ Minimum	44	20	28	18	19	32	37	30	.....	.....	.....
Red Deer	{ Maximum	23	60	59	72	74	76	82	82	76	58	45
	{ Minimum	51	27	27	18	20	32	36	22	16	18	40
Rosedale	{ Maximum	55	54	62	78	80	82	.....	.....	.....	.....	.....
	{ Minimum	47	31	27	16	19	32	.....	.....	.....	.....	.....
Springdale	{ Maximum	24	58	57	69	74	78	80	81	76	56	45
	{ Minimum	56	40	24	15	20	28	32	25	12	29	44
THE BOW RIVER												
Bassano	{ Maximum	30	62	61	76	78	84	92	86	78	62	52
	{ Minimum	44	21	26	20	29	36	43	37	29	15	35
Brooks	{ Maximum	29	62	68	80	81	84	92	91	83	64	50
	{ Minimum	51	30	31	19	21	35	41	34	22	16	42
Calgary	{ Maximum	36	66	64	76	74	82	87	85	80	74	50
	{ Minimum	41	20	14	22	23	34	38	39	23	18	25
Chinook	{ Maximum	33	68	60	70	74	81	88	85	84	74	48
	{ Minimum	42	26	13	22	24	34	39	25	24	18	34
Exshaw	{ Maximum	29	65	68	79	82	83	93	88	82	55	52
	{ Minimum	56	34	22	15	20	34	38	35	17	22	45

MAXIMUM AND MINIMUM TEMPERATURES FOR METEOROLOGICAL STATIONS IN ALBERTA FOR 1916. (Continued)

STATION		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Gleditsia	Maximum...	25	55	60	73	75	83	87	86	72	71	60	48
	Minimum...	-46	-18	-20	24	35	35	39	35	24	19	-12	...
Lethbridge Experimental Farm	Maximum...	32	66	66	78	77	83	89	84	78	76	63	50
	Minimum...	-42	-27	-16	18	6	33	40	35	24	15	-18	36
Lethbridge	Maximum...	39	57	56	72	67	81	85	79	73	65	51	40
	Minimum...	-40	-25	-18	14	6	28	34	31	20	7	-21	28
Macleod	Maximum...	31	60	65	82	75	89	82	82	77	71	57	48
	Minimum...	-44	-28	-13	22	7	35	40	39	28	21	-16	38
Medicine Hat	Maximum...	30	57	67	85	93	87	94	90	84	78	68	52
	Minimum...	-48	-28	-20	16	26	38	46	38	29	21	-12	35
Milk River	Maximum...	26	52	62	72	80	79	...	82	80	75	62	...
	Minimum...	-40	-37	-17	20	23	32	...	35	25	13	-12	...
Minnedosa	Maximum...	...	...	...	77	...	79	99	92	80	74	...	48
	Minimum...	...	...	...	...	...	40	40	40	24	20	...	37
Okauchok	Maximum...	28	61	62	70	71	78	82	76	70	72	59	47
	Minimum...	-37	-20	-19	23	22	32	39	14	24	18	-12	24
Pekisko	Maximum...	37	62	62	70	...	75	80	75	71	65	60	52
	Minimum...	-52	-39	-29	10	9	29	30	28	12	0	-31	35
Pincher Creek	Maximum...	31	55	60	74	67	78	83	78	72	67	53	40
	Minimum...	-41	-22	-16	19	25	34	38	37	24	17	-17	29
Rosedale	Maximum...	29	66	66	80	81	85	92	89	82	76	66	51
	Minimum...	-51	-29	-27	15	23	32	42	37	21	20	-12	40
Strathmore	Maximum...	25	50	62	75	73	79	86	80	...	...	...	...
	Minimum...	-42	-26	-23	15	24	28	34	35	...	...	...	...
Suffield	Maximum...	27	58	64	79	81	83	89	85	79	75	65	49
	Minimum...	-52	-28	-23	14	23	30	43	35	20	16	-18	38
Sundial	Maximum...	30	64	66	77	81	85	92	86	...	77	66	50
	Minimum...	-47	-26	-18	17	25	34	42	39	...	13	17	34
Twin Lakes	Maximum...	40	58	58	73	69	79	85	80	79	71	56	45
	Minimum...	-43	-25	-19	17	21	31	37	34	23	15	-18	31

MAXIMUM AND MINIMUM TEMPERATURES FOR METEOROLOGICAL STATIONS IN ALBERTA FOR 1916. (Continued)

STATION	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
ROCKY MOUNTAINS												
Banff	{ Maximum	19	48	51	69	64	79	84	71	64	40	39
	{ Minimum	-46	-37	-22	19	25	28	35	25	14	-21	-35
Lake Louise	{ Maximum	16	42	47	...	...	...	...	...	...	...	...
	{ Minimum	-48	-37	-28	...	...	...	...	...	...	...	...
ATHABASCA RIVER												
Athabasca	{ Maximum	32	58	55	69	77	79	...	84	71	55	37
	{ Minimum	-58	-44	-30	05	24	28	...	27	19	-12	-45
Edson	{ Maximum . . . . .	...	...	...	...	...	82	82	85	74	60	45
	{ Minimum . . . . .	...	...	...	...	...	20	32	27	14	-19	-39
PEACE RIVER												
Beaver Lodge	{ Maximum	30	53	50	...	...	...	...	...	...	...	...
	{ Minimum	-56	-41	-20	...	...	...	...	...	...	...	...
Dunvegan	{ Maximum	12	53	48	70	...	...	...	...	...	...	...
	{ Minimum	-56	-40	-31	20	...	...	...	...	...	...	...
Fort Vermilion (1)	{ Maximum	22	...	49	62	80	87	...	...	66	...	...
	{ Minimum	-60	...	-39	02	25	29	...	...	09	...	...
Fort Vermilion (2)	{ Maximum	21	41	50	60	79	84	88	78	...	...	19
	{ Minimum	-65	-57	-38	03	22	29	33	23	...	...	-55
Grande Prairie	{ Maximum	26	55	49	62	73	82	97	84	71	48	36
	{ Minimum	-48	-33	-19	21	26	25	34	27	17	-23	-35

SUMMARY OF THE ACREAGE AND YIELDS OF THE LEADING GRAINS
DURING THE LAST TEN YEARS.

	Year	Crop Area in acres	Total Yield in bushels	Average Yield per acre	Average Yield
Spring Wheat	1916	1,549,075	41,163,471	24.18	20.27
	1915	1,637,122	58,830,704	35.93	
	1914	989,561	15,102,083	15.26	
	1913	1,043,114	20,360,104	19.51	
	1912	957,874	17,434,774	18.20	
	1911	757,493	15,730,238	20.75	
	1910	450,493	5,697,956	12.85	
	1909	324,472	6,155,455	18.97	
	1908	212,677	4,001,504	18.81	
	1907	123,935	2,261,610	18.25	
Winter Wheat	1916	18,663	447,475	23.89	22.78
	1915	31,954	1,257,985	39.37	
	1914	49,930	837,204	16.77	
	1913	83,719	1,250,129	14.93	
	1912	120,811	2,395,875	19.83	
	1911	182,671	4,336,749	23.74	
	1910	142,467	2,206,564	15.48	
	1909	102,167	2,312,344	22.63	
	1908	104,956	3,093,422	29.47	
	1907	83,965	1,932,925	20.66	
Oats	1916	1,394,927	60,798,239	43.78	37.45
	1915	1,570,596	90,582,694	57.66	
	1914	1,147,382	34,597,117	30.15	
	1913	1,221,450	44,078,325	36.09	
	1912	971,969	37,085,234	38.15	
	1911	669,827	27,604,993	41.21	
	1910	492,589	12,158,530	24.68	
	1909	693,901	24,819,661	35.76	
	1908	431,145	15,922,974	36.93	
	1907	307,093	9,247,914	30.11	
Barley	1916	297,967	8,477,232	28.64	26.54
	1915	374,062	12,761,187	34.11	
	1914	340,992	7,847,640	23.01	
	1913	333,462	8,645,812	25.92	
	1912	225,055	6,287,112	27.94	
	1911	103,302	3,037,584	29.41	
	1910	90,901	1,899,509	20.79	
	1909	107,764	3,310,332	30.72	
	1908	77,876	1,949,164	25.03	
	1907	54,698	1,082,460	19.78	
Flax	1916	43,361	574,702	12.43	8.86
	1915	41,243	569,762	13.57	
	1914	41,656	207,115	4.97	
	1913	96,445	799,653	8.29	
	1912	112,776	1,196,416	10.60	
	1911	16,549	153,908	9.30	
	1910	15,271	46,155	3.02	
	1909	12,479	131,531	10.54	
	1908	9,262	73,762	7.96	
	1907	6,488	50,002	7.87	

SUMMARY OF THE ACREAGE AND YIELDS OF THE LEADING GRAINS
DURING THE LAST TEN YEARS.—(Continued).

	Year	Crop Area in acres	Total Yield in bushels	Average Yield per acre	Average Yield
Rye	1916	10,134	212,503	23.25	19.67
	1915	12,067	291,399	24.14	
	1914	14,623	261,843	17.90	
	1913	17,452	370,661	21.24	
	1912	2,493	54,119	21.70	
	1911	2,190	38,722	17.68	
	1910	1,522	28,306	18.60	
	1909	1,592	25,801	16.20	
	1908	1,250	22,625	18.10	
	1907	591	10,595	17.91	
Speltz	1916	2,305	62,107	27.51	21.68
	1915	1,194	38,752	32.45	
	1914	2,025	42,707	21.09	
	1913	3,625	70,998	19.59	
	1912	774	11,528	14.89	
	1911	203	5,337	26.29	
	1910	18	164	9.11	
	1909	269	6,369	23.67	
Green Feed	1908	484	9,697	20.03	
	1907	151	3,316	22.15	
		505,044			
			Total Crop Area	Total Yield of Grain	
1916			3,821,476	111,735,729	
1915			3,668,238	164,332,483	
1914			2,586,169	58,895,709	
1913			2,799,267	75,575,682	
1912			2,391,752	64,465,058	
1911			1,732,648	50,907,531	
1910			1,193,261	22,027,184	
1909			1,242,644	36,761,493	
1908			837,641	25,073,147	
1907			576,821	14,588,852	

CROP STATISTICS.

SPRING WHEAT.

No	Crop District	Year	Bushels	Acreage	Yield per Acre
1	Medicine Hat	1915	2,905,459	77,506	37.48
		1916	1,759,082	75,400	23.33
2	Warner	1915	1,837,380	49,568	37.06
		1916	1,296,854	41,834	31.00
3	Cardston	1915	1,239,436	29,438	42.10
		1916	933,704	23,645	31.03
4	Pincher Creek	1915	370,251	10,693	34.62
		1916	341,932	13,202	25.90
5	Macleod	1915	1,273,956	32,601	39.07
		1916	1,003,515	34,029	29.49
6	Claresholm	1915	2,957,720	81,391	36.33
		1916	2,135,517	65,688	32.51
7	Nanton	1915	2,416,352	62,397	38.72
		1916	1,239,714	44,986	27.56
8	Little Bow	1915	5,623,069	128,886	43.62
		1916	7,614,625	246,536	30.85
9	Taber	1915	6,199,758	162,240	38.21
		1916	4,314,296	127,788	32.97
10	Redcliff	1915	2,655,247	61,009	43.52
		1916	1,296,771	48,369	25.81
11	Bow Valley	1915	1,836,724	47,302	38.82
		1916	823,965	26,738	30.80
12	Gleichen	1915	1,889,751	48,705	38.79
		1916	1,811,879	53,590	33.81
13	High River	1915	1,129,795	28,154	40.12
		1916	679,168	26,080	28.35
14	Okotoks	1915	685,507	20,544	33.36
		1916	442,260	13,608	32.50
15	Rocky Mountain	1915	10,020	338	29.68
		1916	35,685	1,381	25.84
16	Calgary	1915	22,144	491	45.09
		1916	48,783	2,121	23.00
17	Cochrane	1915	158,235	2,822	56.07
		1916	202,728	8,447	24.00
18	Didsbury	1915	1,100,261	28,164	39.06
		1916	493,557	18,079	27.30
19	Hand Hills	1915	2,427,177	103,531	23.44
		1916	2,281,889	90,948	25.20
20	Acadia	1915	3,692,008	91,338	40.39
		1916	2,074,227	93,814	29.11
21	Coronation	1915	2,713,748	77,301	35.11
		1916	1,895,269	88,440	21.43
22	Stettler	1915	1,887,749	60,310	31.39
		1916	1,033,053	49,193	21.00
23	Olds	1915	309,247	9,390	32.93
		1916	291,136	13,073	22.27
24	Innisfail	1915	105,077	3,311	31.74
		1916	70,705	3,915	18.06
25	Red Deer	1915	167,092	5,853	28.34
		1916	86,894	4,486	19.37
26	Lacombe	1915	429,695	15,161	28.34
		1916	260,289	12,892	20.19
27	Ponoka	1915	139,455	5,296	26.33
		1916	104,474	4,942	21.14
28	Wetaskiwin	1915	249,438	8,323	29.97
		1916	108,846	6,047	18.00
29	Camrose	1915	795,952	28,519	27.81
		1916	510,568	26,872	19.00
30	Sedgewick	1915	2,704,699	80,998	33.39
		1916	1,450,614	64,764	22.40

SPRING WHEAT—(Continued).

No	Crop District	Year	Bushels	Acreage	Yield per Acre
31	Ribstone	1915	2,654,201	74,298	35.73
		1916	1,087,460	54,373	20.00
32	Wainwright	1915	1,405,884	43,156	32.58
		1916	836,523	40,806	20.50
33	Alexandra	1915	942,060	20,770	45.35
		1916	267,733	16,187	16.54
34	Vermilion	1915	563,757	17,493	20.43
		1916	234,718	12,975	18.09
35	Vegreville	1915	623,575	22,440	26.64
		1916	452,899	20,987	21.58
36	South Edmonton	1915	234,689	8,334	28.16
		1916	89,402	3,916	22.83
37	Leduc	1915	184,112	7,260	25.36
		1916	141,621	6,328	22.38
38	Stony Plain	1915	111,029	4,914	22.59
		1916	98,604	4,482	22.00
39	Edson	1915	12,161	342	35.56
		1916	6,000	300	20.00
40	Lac St. Anne	1915	40,157	1,745	23.01
		1916	24,565	1,652	14.87
41	Pembina	1915	107,390	5,026	21.37
		1916	62,828	3,326	18.89
42	St. Albert	1915	63,037	2,026	31.11
		1916	40,158	2,283	17.59
43	Sturgeon	1915	240,855	10,935	22.03
		1916	186,050	6,092	30.54
44	Victoria	1915	458,165	15,120	30.30
		1916	318,953	12,577	25.36
45	Whitford	1915	358,240	12,772	28.05
		1916	206,648	10,220	20.22
46	Beaver River	1915	91,415	2,905	31.46
		1916	38,328	1,912	19.00
47	St. Paul	1915	96,672	3,544	27.27
		1916	29,069	2,570	11.70
48	Clearwater	1915	3,091	120	25.76
		1916	2,715	190	14.29
49	Athabasca	1915	49,427	2,471	20.00
		1916	30,207	710	17.63
50	Grouard	1915	32,265	1,005	32.10
		1916	21,865	540	40.49
51	Peace River	1915	247,312	8,248	29.98
		1916	113,156	7,360	15.85
52	Lethbridge	1915	291,757	6,689	43.62
		1916	185,626	5,351	34.69
	Indian Reserves	1915	83,609	3,702	22.58
		1916	46,344	3,031	15.29

WINTER WHEAT.

No	Crop District	Year	Bushels	Acreage	Yield per Acre
1	Medicine Hat	1915	14,526	314	46.26
		1916	58,506	3,903	14.99
2	Warner	1915	120,769	2,049	58.94
		1916	.....	.....	.....
3	Cardston	1915	270,756	8,312	32.57
		1916	60,880	3,620	16.82
4	Pincher Creek	1915	403,669	9,712	41.66
		1916	92,220	2,767	33.33
5	Macleod	1915	76,237	2,228	34.21
		1916	31,350	1,045	30.00
6	Claresholm	1915	25,417	614	41.39
		1916	4,746	116	41.70
7	Nanton	1915	13,679	360	37.99
		1916	5,264	191	27.56
8	Little Bow	1915	9,614	259	37.11
		1916	5,627	331	17.00
9	Taber	1915	13,809	308	44.83
		1916	38,337	859	44.63
10	Redcliff	1915	40,279	918	43.87
		1916	8,767	361	24.27
11	Bow Valley	1915	1,470	70	21.00
		1916	.....	.....	.....
12	Gleichen	1915	75,542	1,581	47.70
		1916	.....	.....	.....
13	High River	1915	4,410	97	45.46
		1916	4,955	219	22.63
14	Okotoks	1915	10,134	227	44.64
		1916	2,167	103	21.04
15	Rocky Mountain	1915	25,930	716	36.21
		1916	24,960	755	33.06
16	Calgary	1915	495	15	33.00
		1916	45,135	885	51.00
17	Cochrane	1915	16,825	432	38.94
		1916	2,393	130	18.41
18	Didsbury	1915	15,654	467	33.52
		1916	5,469	269	20.33
19	Hand Hills	1915	9,329	242	38.54
		1916	275	11	26.25
20	Acadia	1915	160	5	32.00
		1916	9,505	565	17.00
21	Coronation	1915	4,337	131	33.11
		1916	2,700	150	18.80
22	Stettler	1915	.....	.....	.....
		1916	2,016	80	25.20
23	Olds	1915	52,057	1,273	40.87
		1916	6,903	531	13.00
24	Innisfail	1915	1,673	60	27.88
		1916	1,104	68	16.24
25	Red Deer	1915	14,384	444	32.39
		1916	2,527	361	7.00
26	Lacombe	1915	3,499	112	31.24
		1916	2,051	100	20.51
27	Ponoka	1915	4,168	133	31.34
		1916	2,176	100	21.76
28	Wetaskiwin	1915	543	28	19.39
		1916	.....	.....	.....
29	Camrose	1915	.....	.....	.....
		1916	418	22	19.00
30	Sedgewick	1915	.....	.....	.....
		1916	.....	.....	.....

WINTER WHEAT—(Continued).

No	Crop District	Year	Bushels	Acreage	Yield per Acre
31	Ribstone	1915	.....	.....	.....
		1916	.....	.....	.....
32	Wainwright	1915	3,542	119	29.76
		1916	13,611	577	23.89
33	Alexandra	1915	.....	.....	.....
		1916	.....	.....	.....
34	Vermilion	1915	308	11	28.00
		1916	216	10	21.64
35	Vegreville	1915	.....	.....	.....
		1916	.....	.....	.....
36	South Edmonton	1915	2,680	67	40.00
		1916	126	6	21.00
37	Leduc	1915	753	26	28.96
		1916	534	25	21.34
38	Stony Plain	1915	56	3	18.67
		1916	.....	.....	.....
39	Edson	1915	.....	.....	.....
		1916	.....	.....	.....
40	Lac St. Anne	1915	42	6	7.00
		1916	.....	.....	.....
41	Pembina	1915	364	19	19.16
		1916	.....	.....	.....
42	St. Albert	1915	43	4	10.75
		1916	.....	.....	.....
43	Sturgeon	1915	.....	.....	.....
		1916	87	5	17.49
44	Victoria	1915	216	7	30.86
		1916	.....	.....	.....
45	Whitford	1915	.....	.....	.....
		1916	.....	.....	.....
46	Beaver River	1915	.....	.....	.....
		1916	.....	.....	.....
47	St. Paul	1915	.....	.....	.....
		1916	.....	.....	.....
48	Clearwater	1915	.....	.....	.....
		1916	.....	.....	.....
49	Athabasca	1915	437	18	24.28
		1916	249	12	19.95
50	Grouard	1915	140	3	46.67
		1916	.....	.....	.....
51	Peace River	1915	1,302	21	62.00
		1916	4,536	100	45.36
52	Lethbridge	1915	.....	.....	.....
		1916	.....	.....	.....
	Indian Reserves	1915	18,767	542	34.62
		1916	7,665	486	15.74

OATS.

No	Crop District	Year	Bushels	Acreage	Yield per Acre
1	Medicine Hat	1915	1,340,790	17,149	78.64
		1916	765,801	16,637	46.03
2	Warner	1915	808,218	11,931	67.74
		1916	542,569	9,919	54.70
3	Cardston	1915	805,038	14,737	54.62
		1916	518,019	10,672	48.54
4	Pincher Creek	1915	465,472	9,382	49.61
		1916	311,777	7,049	44.23
5	Macleod	1915	708,709	10,442	67.87
		1916	418,112	9,052	46.19
6	Claresholm	1915	1,081,941	16,521	65.67
		1916	757,879	14,645	51.75
7	Nanton	1915	2,853,278	41,780	68.73
		1916	1,365,970	29,294	47.21
8	Little Bow	1915	2,721,196	35,260	77.11
		1916	1,286,828	25,511	52.50
9	Taber	1915	3,044,907	44,711	68.10
		1916	1,967,349	35,731	55.06
10	Redcliff	1915	2,318,292	32,425	71.49
		1916	1,160,269	25,344	45.78
11	Bow Valley	1915	1,703,526	23,607	72.16
		1916	1,139,908	15,907	71.85
12	Gleichen	1915	6,025,931	97,517	66.48
		1916	5,129,277	87,506	58.65
13	High River	1915	5,117,818	78,614	65.10
		1916	3,342,870	67,431	49.56
14	Okotoks	1915	2,123,300	31,600	67.19
		1916	1,320,475	62,552	21.11
15	Rocky Mountain	1915	20,348	539	37.75
		1916	80,036	1,819	44.00
16	Calgary	1915	68,474	1,402	48.84
		1916	76,625	5,750	53.30
17	Cochrane	1915	872,390	15,738	55.43
		1916	923,011	18,658	49.47
18	Didsbury	1915	4,130,345	72,549	56.93
		1916	3,438,136	78,728	43.29
19	Hand Hills	1915	3,683,182	52,435	70.34
		1916	1,850,814	45,338	44.00
20	Acadia	1915	2,295,797	34,869	65.84
		1916	1,199,562	28,561	42.00
21	Coronation	1915	3,097,731	53,626	57.76
		1916	3,409,759	50,418	67.63
22	Stettler	1915	2,785,205	50,013	55.59
		1916	2,085,776	50,823	41.04
23	Olds	1915	2,490,183	57,561	43.26
		1916	1,917,758	45,794	44.28
24	Innisfail	1915	1,485,086	29,121	50.98
		1916	1,055,364	28,370	37.20
25	Red Deer	1915	1,263,681	26,631	47.45
		1916	450,360	15,237	36.12
26	Lacombe	1915	2,122,979	40,711	49.69
		1916	1,355,546	35,014	39.00
27	Ponoka	1915	1,376,986	30,322	45.41
		1916	1,027,310	25,946	35.74
28	Wetaskiwin	1915	1,357,561	31,345	43.41
		1916	971,954	27,691	35.10
29	Camrose	1915	4,038,976	81,629	49.48
		1916	2,881,716	75,832	38.00
30	Sedgewick	1915	986,908	15,410	57.93
		1916	632,702	15,558	41.31

OATS—(Continued).

No	Crop District	Year	Bushels	Acreage	Yield per Acre
31	Ribstone	1915	2,145,111	65,571	61.36
		1916	2,273,805	50,698	44.85
32	Wainwright	1915	2,717,459	39,761	68.34
		1916	1,147,990	34,065	33.70
33	Alexandra	1915	2,441,991	35,520	68.75
		1916	1,139,122	27,535	41.37
34	Vermilion	1915	1,470,989	23,623	62.27
		1916	784,489	22,945	34.99
35	Vegreville	1915	2,332,552	46,288	50.40
		1916	2,051,838	46,956	43.68
36	South Edmonton	1915	1,390,373	26,054	53.37
		1916	474,254	12,151	39.03
37	Leduc	1915	1,158,673	28,337	40.89
		1916	1,046,394	25,978	40.28
38	Stony Plain	1915	1,015,106	25,004	40.61
		1916	819,120	20,478	40.00
39	Edson	1915	.....	.....	.....
		1916	10,000	250	40.00
40	Lac St. Anne	1915	462,468	11,108	41.63
		1916	366,244	10,734	34.12
41	Pembina	1915	495,518	14,907	39.95
		1916	587,424	14,966	41.95
42	St. Albert	1915	986,299	24,125	40.88
		1916	971,416	16,127	47.84
43	Sturgeon	1915	1,467,368	31,479	46.61
		1916	1,515,213	36,476	41.54
44	Victoria	1915	1,590,595	32,365	49.11
		1916	1,195,583	30,782	38.84
45	Whitford	1915	1,209,827	26,494	45.67
		1916	875,165	24,101	36.45
46	Beaver River	1915	445,688	9,572	46.56
		1916	213,782	7,624	28.17
47	St. Paul	1915	646,554	14,487	44.63
		1916	309,301	10,141	30.50
48	Clearwater	1915	67,907	1,635	41.53
		1916	38,428	1,033	37.20
49	Athabasca	1915	97,355	3,004	32.41
		1916	140,057	4,489	31.20
50	Grouard	1915	195,278	3,071	63.59
		1916	92,560	2,288	40.45
51	Peace River	1915	1,333,868	18,187	73.34
		1916	756,421	17,994	36.48
52	Lethbridge	1915	269,160	9,126	29.49
		1916	394,244	7,447	52.94
	Indian Reserves	1915	161,618	3,931	41.11
		1916	211,857	2,882	80.45

BARLEY.

No.	Crop District	Year	Bushels	Acreage	Yield per Acre
1	Medicine Hat	1915	148,912	3,550	41.94
		1916	62,965	3,668	23.60
2	Warner	1915	151,836	3,709	40.94
		1916	78,600	2,500	31.44
3	Cardston	1915	199,668	5,372	37.16
		1916	115,334	3,512	32.84
4	Pincher Creek	1915	65,168	2,382	27.33
		1916	75,482	1,977	38.18
5	Macleod	1915	28,114	688	42.08
		1916	15,949	439	36.33
6	Claresholm	1915	81,776	2,115	38.66
		1916	62,856	1,800	34.92
7	Nanton	1915	131,688	3,519	37.42
		1916	86,313	2,843	30.36
8	Little Bow	1915	325,492	6,852	47.50
		1916	173,902	4,524	38.44
9	Taber	1915	319,288	7,315	43.64
		1916	253,624	4,232	59.93
10	Redcliff	1915	167,190	3,628	46.08
		1916	69,204	2,258	30.87
11	Bow Valley	1915	138,188	3,607	38.31
		1916	70,316	2,094	33.58
12	Gleichen	1915	823,120	23,759	34.64
		1916	507,779	15,099	33.63
13	High River	1915	331,805	8,969	36.99
		1916	186,461	5,574	33.47
14	Okotoks	1915	194,766	5,524	35.25
		1916	110,321	3,495	29.07
15	Rocky Mountain	1915	2,646	78	33.92
		1916	3,720	100	37.20
16	Calgary	1915	37,834	1,062	35.62
		1916	36,007	1,179	30.54
17	Cochrane	1915	238,228	7,193	33.11
		1916	199,648	6,239	32.00
18	Didsbury	1915	702,834	20,009	35.13
		1916	514,779	17,751	29.00
19	Hand Hills	1915	195,448	6,307	30.98
		1916	269,906	5,978	45.15
20	Acadia	1915	115,586	3,064	37.72
		1916	76,440	2,800	27.30
21	Coronation	1915	243,530	4,047	34.55
		1916	93,047	3,787	24.57
22	Stettler	1915	459,816	14,471	31.79
		1916	404,896	12,653	32.00
23	Olds	1915	376,468	10,195	36.93
		1916	209,000	8,360	25.00
24	Innisfail	1915	290,532	8,824	32.93
		1916	200,231	7,146	28.02
25	Red Deer	1915	307,238	8,887	34.57
		1916	167,853	7,578	22.15
26	Lacombe	1915	642,157	19,298	33.28
		1916	406,150	15,338	26.48
27	Ponoka	1915	288,756	8,956	32.24
		1916	233,138	5,536	44.10
28	Wetaskiwin	1915	391,529	11,268	34.75
		1916	197,191	8,623	23.10
29	Camrose	1915	499,994	15,847	31.55
		1916	313,248	12,048	26.00

BARLEY—(Continued).

No	Crop District	Year	Bushels	Acreage	Yield per Acre
30	Sedgewick	1915	523,084	15,310	34.17
		1916	410,670	15,210	27.00
31	Ribstone	1915	212,906	6,147	34.64
		1916	134,309	5,935	22.63
32	Wainwright	1915	333,318	7,757	42.97
		1916	147,113	6,868	21.42
33	Alexandra	1915	281,164	6,952	40.44
		1916	118,927	5,288	22.49
34	Vermilion	1915	250,972	8,669	28.95
		1916	169,162	7,868	21.50
35	Vegreville	1915	295,926	10,210	28.98
		1916	191,252	7,656	24.85
36	South Edmonton	1915	348,684	10,027	34.77
		1916	109,922	3,522	31.21
37	Leduc	1915	326,662	10,356	31.54
		1916	241,178	9,832	24.53
38	Stony Plain	1915	160,524	5,705	28.14
		1916	156,663	5,747	27.26
39	Edson	1915	79,808	2,307	34.59
		1916	27,000	1,000	27.00
40	Lac Ste. Anne	1915	105,240	4,523	23.29
		1916	65,183	3,152	20.68
41	Pembina	1915	121,036	4,064	29.78
		1916	48,433	4,411	10.98
42	St. Albert	1915	212,288	6,259	33.91
		1916	181,433	5,352	33.90
43	Sturgeon	1915	267,200	8,970	29.79
		1916	315,834	9,757	32.37
44	Victoria	1915	590,630	18,868	31.30
		1916	441,218	15,514	28.44
45	Whitford	1915	360,432	11,703	30.79
		1916	280,483	10,935	25.65
46	Beaver River	1915	92,458	2,812	32.88
		1916	43,866	2,144	20.46
47	St. Paul	1915	103,528	3,552	29.15
		1916	54,136	2,692	20.11
48	Clearwater	1915	29,922	1,089	27.47
		1916	31,562	1,314	24.02
49	Athabasca	1915	17,738	701	25.30
		1916	17,399	749	23.23
50	Grouard	1915	18,350	488	37.58
		1916	7,859	423	18.58
51	Peace River	1915	89,412	2,969	30.12
		1916	68,123	3,272	20.82
52	Lethbridge	1915	31,138	729	42.71
		1916	12,393	595	20.83
	Indian Reserves	1915	9,112	418	21.80
		1916	8,754	300	29.18

FLAX.

No	Crop District	Year	Bushels	Acreage	Yield per Acre
1	Medicine Hat	1915	84,206	6,655	12.66
		1916	80,915	6,172	13.11
2	Warner	1915	54,845	3,512	15.40
		1916	34,599	2,153	16.07
3	Cardston	1915	4,744	301	15.70
		1916	7,441	410	18.15
4	Pincher Creek	1915	2,364	147	16.08
		1916	6,356	763	8.85
5	Macleod	1915	1,927	84	22.13
		1916	3,745	176	21.28
6	Claresholm	1915	2,094	83	25.23
		1916	5,604	600	9.34
7	Nanton	1915	.....	.....	.....
		1916	2,166	145	14.23
8	Little Bow	1915	29,427	1,585	18.56
		1916	38,665	2,198	17.55
9	Taber	1915	81,109	6,120	13.25
		1916	103,796	2,761	14.00
10	Redcliff	1915	112,311	7,858	14.29
		1916	77,871	7,570	10.30
11	Bow Valley	1915	19,782	1,362	14.52
		1916	9,604	975	9.55
12	Gleichen	1915	24,685	1,618	15.26
		1916	44,954	3,124	14.39
13	High River	1915	8,225	481	17.08
		1916	2,470	203	12.17
14	Okotoks	1915	.....	.....	.....
		1916	1,389	133	10.44
15	Rocky Mountain	1915	.....	.....	.....
		1916	.....	.....	.....
16	Calgary	1915	.....	.....	.....
		1916	160	8	20.00
17	Cochrane	1915	2,434	188	12.95
		1916	11,001	977	11.26
18	Didsbury	1915	6,411	265	24.19
		1916	1,515	101	15.00
19	Hand Hills	1915	38,595	3,180	12.14
		1916	41,540	4,154	10.00
20	Acadia	1915	54,304	4,343	12.50
		1916	46,620	5,371	8.68
21	Coronation	1915	8,560	750	11.37
		1916	20,151	2,239	9.00
22	Stettler	1915	1,836	171	10.73
		1916	984	123	8.00
23	Olds	1915	719	58	12.39
		1916	1,452	110	13.20
24	Innisfail	1915	179	18	9.95
		1916	67	6	11.25
25	Red Deer	1915	.....	.....	.....
		1916	60	4	15.00
26	Lacombe	1915	735	70	10.50
		1916	483	43	11.23
27	Ponoka	1915	37	3	12.33
		1916	.....	.....	.....
28	Wetaskiwin	1915	.....	.....	.....
		1916	.....	.....	.....
29	Camrose	1915	2,909	246	11.82
		1916	6,578	572	11.50
30	Sedgewick	1915	1,554	154	10.09
		1916	872	109	8.00

FLAX—(Continued).

No	Crop District	Year	Bushels	Acreage	Yield per Acre
31	Ribstone	1915	8,771	812	10.80
		1916	8,870	710	12.50
32	Wainwright	1915	4,439	328	13.54
		1916	1,377	311	4.43
33	Alexandra	1915	2,413	155	15.56
		1916	1,300	100	13.00
34	Vermilion	1915	447	42	10.64
		1916	14	7	2.00
35	Vegreville	1915	908	64	14.19
		1916	2 002	275	6.93
36	South Edmonton	1915	105	9	11.67
		1916	24	3	17.00
37	Leduc	1915	.....	.....	.....
		1916	1,050	105	10.00
38	Stony Plain	1915	.....	.....	.....
		1916	.....	.....	.....
39	Edson	1915	84	7	12.00
		1916	.....	.....	.....
40	Lac St. Anne	1915	.....	.....	.....
		1916	50	4	12.50
41	Pembina	1915	184	17	10.82
		1916	87	3	28.00
42	St. Albert	1915	18	1	18.00
		1916	44	3	14.00
43	Sturgeon	1915	.....	.....	.....
		1916	39	3	13.00
44	Victoria	1915	61	5	12.30
		1916	147	14	10.00
45	Whitford	1915	.....	.....	.....
		1916	.....	.....	.....
46	Beaver River	1915	.....	.....	.....
		1916	.....	.....	.....
47	St. Paul	1915	.....	.....	.....
		1916	.....	.....	.....
48	Clearwater	1915	.....	.....	.....
		1916	.....	.....	.....
49	Athabasca	1915	.....	.....	.....
		1916	.....	.....	.....
50	Grouard	1915	.....	.....	.....
		1916	.....	.....	.....
51	Peace River	1915	2,484	210	11.82
		1916	2,000	200	10.00
52	Lethbridge	1915	5,850	396	14.77
		1916	6,840	423	16.17
	Indian Reserves	1915	.....	.....	.....
		1916	.....	.....	.....

SPELTZ.

No	Crop District	Year	Bushels	Acreage	Yield per Acre
1	Medicine Hat	1915	.....	.....	.....
		1916	1,492	47	31.75
2	Warner	1915	2,808	115	24.14
		1916	1,478	34	43.47
3	Cardston	1915	.....	.....	.....
		1916	400	10	38.00
4	Pincher Creek	1915	.....	.....	.....
		1916	.....	.....	.....
5	Macleod	1915	.....	.....	.....
		1916	.....	.....	.....
6	Claresholm	1915	294	10	29.40
		1916	.....	.....	.....
7	Nanton	1915	286	12	23.83
		1916	505	17	28.33
8	Little Bow	1915	1,512	42	36.00
		1916	1,573	51	30.85
9	Taber	1915	2,014	115	17.51
		1916	2,721	149	18.26
10	Red Deer	1915	1,071	30	35.70
		1916	1,157	34	34.04
11	Bow Valley	1915	3,882	51	76.12
		1916	2,008	62	32.23
12	Gleichen	1915	5,304	147	36.08
		1916	3,206	90	35.62
13	High River	1915	380	9	42.02
		1916	.....	.....	.....
14	Okotoks	1915	.....	.....	.....
		1916	.....	.....	.....
15	Rocky Mountain	1915	.....	.....	.....
		1916	.....	.....	.....
16	Calgary	1915	.....	.....	.....
		1916	.....	.....	.....
17	Cochrane	1915	181	5	36.20
		1916	451	21	21.78
18	Didsbury	1915	310	21	14.76
		1916	120	6	25.00
19	Hand Hills	1915	4,330	121	35.78
		1916	2,350	94	25.00
20	Acadia	1915	3,125	112	27.90
		1916	2,200	100	22.00
21	Coronation	1915	134	3	44.67
		1916	2,498	68	35.56
22	Stettler	1915	2,541	70	36.30
		1916	1,315	69	19.06
23	Olds	1915	55	2	27.50
		1916	75	6	12.50
24	Innisfail	1915	718	13	55.23
		1916	.....	.....	.....
25	Red Deer	1915	108	9	12.00
		1916	.....	.....	.....
26	Lacombe	1915	100	3	33.33
		1916	.....	.....	.....
27	Ponoka	1915	.....	.....	.....
		1916	50	4	12.50
28	Wetaskiwin	1915	.....	.....	.....
		1916	26	1	26.00
29	Camrose	1915	89	3	29.67
		1916	72	3	23.00
30	Sedgewick	1915	283	9	31.44
		1916	750	15	50.00

SPELTZ—(Continued).

No	Crop District	Year	Bushels	Acreage	Yield per Acre
31	Ribstone	1915	3,567	125	28.53
		1916	3,372	150	22.48
32	Wainwright	1915	.....	.....	.....
		1916	650	26	25.00
33	Alexandra	1915	2,898	81	35.66
		1916	851	37	23.00
34	Vermilion	1915	150	3	50.00
		1916	.....	.....	.....
35	Vegreville	1915	704	19	37.05
		1916	.....	.....	.....
36	South Edmonton	1915	.....	.....	.....
		1916	.....	.....	.....
37	Leduc	1915	.....	.....	.....
		1916	11,009	521	20.13
38	Stony Plain	1915	.....	.....	.....
		1916	.....	.....	.....
39	Edson	1915	960	32	30.00
		1916	.....	.....	.....
40	Lac St. Anne	1915	27	2	13.59
		1916	52	4	13.00
41	Pembina	1915	50	2	25.00
		1916	.....	.....	.....
42	St. Albert	1915	18	1	18.00
		1916	.....	.....	.....
43	Sturgeon	1915	.....	.....	.....
		1916	.....	.....	.....
44	Victoria	1915	.....	.....	.....
		1916	21,450	717	28.21
45	Whitford	1915	.....	.....	.....
		1916	.....	.....	.....
46	Beaver River	1915	245	11	22.27
		1916	276	6	46.00
47	St. Paul	1915	231	8	28.87
		1916	.....	.....	.....
48	Clearwater	1915	.....	.....	.....
		1916	.....	.....	.....
49	Athabasca	1915	.....	.....	.....
		1916	.....	.....	.....
50	Grouard	1915	.....	.....	.....
		1916	.....	.....	.....
51	Peace River	1915	.....	.....	.....
		1916	.....	.....	.....
52	Lethbridge	1915	.....	.....	.....
		1916	.....	.....	.....
	Indian Reserves	1915	.....	.....	.....
		1916	.....	.....	.....

RYE.

No	Crop District	Year	Bushels	Acreage	Yield per Acre
1	Medicine Hat	1915	17,750	510	35.00
		1916	10,403	516	20.16
2	Warner	1915	4,812	141	34.10
		1916	12,304	554	22.21
3	Cardston	1915	1,211	44	27.52
		1916	5,262	158	32.67
4	Pincher Creek	1915	.....	.....	.....
		1916	130	5	20.00
5	Macleod	1915	4,654	165	28.02
		1916	913	51	17.90
6	Claresholm	1915	2,430	88	27.62
		1916	1,553	82	18.94
7	Nanton	1915	2,784	124	22.46
		1916	7,511	203	35.20
8	Little Bow	1915	2,380	128	18.51
		1916	7,288	200	36.44
9	Taber	1915	9,255	301	30.75
		1916	6,335	82	77.26
10	Redcliff	1915	2,277	84	27.10
		1916	2,822	53	35.24
11	Bow Valley	1915	389	17	22.88
		1916	167	5	33.35
12	Gleichen	1915	13,826	505	27.39
		1916	4,646	175	26.55
13	High River	1915	10,048	427	23.53
		1916	7,221	350	20.62
14	Okotoks	1915	4,579	169	27.09
		1916	9,223	343	26.89
15	Rocky Mountain	1915	.....	.....	.....
		1916	.....	.....	.....
16	Calgary	1915	1,420	63	22.54
		1916	526	52	10.12
17	Cochrane	1915	7,820	357	21.90
		1916	4,327	205	21.11
18	Didsbury	1915	60,510	2,803	21.59
		1916	31,152	1,416	22.00
19	Hand Hills	1915	12,288	584	21.04
		1916	8,748	324	27.00
20	Acadia	1915	7,091	454	15.70
		1916	12,447	675	18.44
21	Coronation	1915	5,514	129	42.74
		1916	2,153	113	19.05
22	Stettler	1915	28,283	835	33.87
		1916	10,327	605	17.07
23	Olds	1915	16,555	499	21.25
		1916	4,008	375	10.69
24	Innisfail	1915	1,350	56	24.10
		1916	2,534	144	17.60
25	Red Deer	1915	2,189	116	18.89
		1916	3,387	161	21.04
26	Lacombe	1915	15,288	667	22.92
		1916	7,233	535	13.52
27	Ponoka	1915	10,489	627	16.72
		1916	4,820	482	10.00
28	Wetaskiwin	1915	4,731	267	17.71
		1916	2,960	185	16.00
29	Camrose	1915	2,069	93	22.24
		1916	1,460	73	20.00
30	Sedgewick	1915	12,008	379	31.68
		1916	6,912	256	27.00

RYE—(Continued).

No	Crop District	Year	Bushels	Acreage	Yield per Acre
31	Ribstone	1915	4,430	179	24.75
		1916	3 890	313	12.43
32	Wainwright	1915	9,194	347	26.49
		1916	6,476	264	24.53
33	Alexandra	1915	2,277	74	30.77
		1916	841	74	11.36
34	Vermilion	1915	1,563	60	26.05
		1916	912	57	16.00
35	Vegreville	1915	2 248	93	24.17
		1916	1,275	75	17.00
36	South Edmonton	1915	1,460	76	19.21
		1916	260	13	20.00
37	Leduc	1915	476	28	17.00
		1916	8 060	403	20.00
38	Stony Plain	1915	281	12	23.41
		1916	704	60	11.73
39	Edson	1915	429	11	39.00
		1916	.....	.....	.....
40	Lac St. Anne	1915	8	1	8.00
		1916	135	14	91.66
41	Pembina	1915	.....	.....	.....
		1916	287	8	33.00
42	St. Albert	1915	.....	.....	.....
		1916	.....	.....	.....
43	Sturgeon	1915	133	8	16.62
		1916	1,596	80	19.00
44	Victoria	1915	1,448	74	19.56
		1916	6,735	246	26.08
45	Whitford	1915	1,127	70	16.10
		1916	294	18	16.90
46	Beaver River	1915	1,285	55	23.36
		1916	1,106	64	7.28
47	St. Paul	1915	887	58	15.12
		1916	535	28	19.11
48	Clearwater	1915	50	4	12.50
		1916	.....	.....	.....
49	Athabasca	1915	38	2	19.00
		1916	525	34	15.46
50	Grouard	1915	.....	.....	.....
		1916	.....	.....	.....
51	Peace River	1915	.....	.....	.....
		1916	100	5	20.00
52	Lethbridge	1915	75	3	25.00
		1916	.....	.....	.....
	Indian Reserves	1915	.....	.....	.....
		1916	.....	.....	.....



PROVINCIAL EXHIBIT, TORONTO EXHIBITION, 1916.

REPORT OF THE PUBLICITY COMMISSIONER

SIR,—I beg to submit herewith the annual report of the Publicity Branch of the Department for the year 1916.

Since the outbreak of the war, immigration to our province has practically ceased, except that coming from Eastern Canada and the United States. Under the circumstances, it is surprising that there should be any movement whatever. The statistics at hand go to show that a little over seven thousand immigrants came to Alberta in 1916, or forty-five per cent. of the total immigration to Western Canada.

HOMESTEAD ENTRIES.

During the past year 5,074 homesteads, 465 pre-emptions and 63 purchased homestead entries were made in Alberta, taking up 896,328 acres of land. A large proportion of these entries were made in the Peace River District. The extension of railway facilities to this territory has opened up a large amount of first class homestead land.

Although the movement to our province has not been particularly large as compared with some previous years, it is surprising to find the number of requests which come for information. This is a very plain indication that when the war is over we may expect immigration to assume its old proportions.

In January, 1916, the Department of the Interior called a conference in Chicago of Provincial and Dominion Immigration officials. Representatives were present from the four western provinces; Alberta being represented by Mr. R. J. Daly, Publicity Commissioner located at Winnipeg. The object of this conference was to discuss the best methods of inaugurating plans for a more vigorous campaign in the interests of immigration to Canada. Early in the year, four special commissioners were sent from this province to the United States to work in the interest of immigration. These men met a great many people who were convinced that Alberta should be their future home, but who preferred to wait until the war is over before moving here. There is no doubt that the prosperity of the settlers of this province in the past few years has awakened an interest in the United States and when the war is over large numbers of Americans may be expected to take up residence in this province.

STATISTICS.

We have endeavoured to improve this service during the past year by obtaining reports from the various municipalities and local improvement districts, in addition to those already received from our regular crop correspondents. As our settlements increase from year to year the importance of this branch of our service has become more apparent and we hope to further improve it in the near future by closer co-operation with the Dominion Statistician's office. The system recently adopted of registering our threshing machines in order to be able to check up their reports has proved very successful. The registration

during the current year has reached almost 3,000 in number. This increase over past years has been out of proportion to the increase of acreage and yield and has proved the wisdom of our plan to register threshing machines.

There is, we are pleased to state, a growing interest in every detail of our production from year to year, and as the value of our land depends very largely upon the agricultural output, we are extremely anxious to obtain the energetic and further co-operation of all concerned.

TORONTO EXHIBITION.

We were again represented at the Toronto Exhibition this year and awarded the gold medal for our agricultural exhibit. This exhibit exceeded any previous effort in the actual display of agricultural products. In previous years our exhibit has featured cereals. This year we made a special attempt to get together a large collection of grasses, and this portion of the exhibit especially impressed the public with the great opportunities afforded for mixed farming.

Tables illustrating the growth of the dairy industry were conspicuously displayed and attested the utility of the nutritious grasses of the prairie.

The demand for literature and information with respect to conditions of settlement exceeded any previous year. There is no doubt that the exhibition has been valuable in directing attention to the opportunities in Alberta for intending settlers.

HARVEST HELP.

During the year the immigration office in Winnipeg was closed and the commissioner, Mr. R. J. Daly, transferred to the Edmonton office, where he assisted the Chief Commissioner throughout the remainder of the year, and also acted as one of the four special commissioners who were located in the United States for a few weeks in the early part of the year. The problem of harvest help again presented some difficulties this year. The continued enlistment for Military Service of so many men from farms of Alberta greatly reduced our local supply. Special arrangements were made with the railway companies for reduced fares from Eastern Canada, British Columbia and the United States.

We were also granted the special privilege of distributing men at the reduced rate of one cent per mile within the province from the three cities, viz., Edmonton, Calgary and Lethbridge. Arrangements were made to use the soldiers in training at Sarcée Camp.

Men were supplied as follows:

From Edmonton	2,600
From Calgary	2,138
From Sarcée Camp	3,000
From Lethbridge	277
From Winnipeg	2,000
From British Columbia	882
Total	10,897

The heavy crop and scarcity of labor caused wages to rise above former years; commencing at \$2.50 per day, farmers offered as high as \$4.00 and \$5.00 per day before the end of the season. With few exceptions, however, the supply of labor equalled the demand and no great loss was suffered on account of the extra call for help.

We wish to record our appreciation of the co-operation and practical assistance rendered by the several railway companies in granting reduced rates and doing all in their power to provide the men required from outside sources.

Respectfully submitted,

CHARLES S. HOTCHKISS,

Chief Publicity Commissioner.



CLASS IN SEWING AT SCHOOL OF AGRICULTURE.

REPORT OF PROVINCIAL SANITARY ENGINEER

SIR,—I have the honor to submit the annual report of the Provincial Sanitary Engineering Branch of the Department.

This branch administers, on behalf of the Provincial Board of Health, those sections of the Public Health Act and regulations dealing with water supply, sewerage, sewage disposal, drainage, refuse destruction, pollution of waters, plumbing, offensive trades, sanitation of health districts and generally all matters and things included in the science of Sanitary Engineering, coming under the jurisdiction of the Provincial Board of Health. It examines all plans and specifications submitted to the provincial board and prepares and issues the Provincial Board of Health certificates. It inspects on behalf of the Public Works Department all public institutions, and advises the department as to the construction, operation and maintenance of their sanitary engineering works.

This branch supplies the Public Utility Commission with the expert advice required by the commission when dealing with applications from local authorities for permission to raise money by way of debenture or upon the security of stock, in connection with sanitary engineering works. It inquires into, and reports to the board, and generally acts in an advisory capacity in respect to all such matters. It is intended that this branch shall also supervise, on behalf of the Public Utility Commission, the expenditure of all moneys borrowed for sanitary engineering works, by a local authority, under the Public Utilities Act.

This branch examines the plans for new hospitals, as required under the Hospitals Ordinance, and inspects the construction features of existing hospitals.

There has been submitted to the Provincial Board of Health during the year 1916, six sets of plans and specifications for waterworks, sewerage and sewage disposal works, for which certificates have been issued; several necessary sets of plans and specifications preliminary to these; a few sets for which certificates have not been issued by the board; and many sets of plans and specifications for miscellaneous works for which the approval of the Provincial Sanitary Engineer alone is required.

The following detailed list of the works for which certificates have been issued by the board, together with the estimated cost of each:

WATERWORKS AND WATER PURIFICATION.

Medicine Hat—

Certificate No. 118—Extension to waterworks;	
estimated cost	\$ 18,506.18

Lethbridge

Certificate No. 119—Site of water filtration plant;	
estimated cost	

Certificate No. 121—Water filtration plant; estimated	
cost	100,000.00

SEWERAGE AND SEWAGE DISPOSAL.

Edmonton

Certificate No. 116—Extension to sewerage system;
estimated cost \$1,594,116.89
(Constructed in 1914 and 1915)

Certificate No. 117—Extension to sewer system in
Highlands; estimated cost 6,170.00

Edmonton Stockyards, Ltd.

Certificate No. 120—Amended location of the proposed
sewage disposal plant; estimated cost 1,200.00

In connection with the foregoing works, an investigation on the site of the works was made in each case by the Provincial Sanitary Engineer before the certificate of the Provincial Board of Health was issued.

In connection with water supplies, sewerage and sewage disposal, refuse disposal, drainage and other sanitary engineering works, investigation of typhoid outbreaks, inspection of hospitals and public institutions and other miscellaneous matters, also in giving still further assistance to the medical part of the board's work on account of the absence of three of our medical men at the war and one other who has gone into private practice, the writer visited the following places throughout the year, some of these two or three times as circumstances required:

Barons	Edmonton Stockyards	Okotoks
Bassano	Frank	Orton
Bellevue	Ft. Saskatchewan jail	Ponoka Asylum
Beverly	Hardisty	Red Deer
Blairmore	High River	Redcliff
Bremner	Hillcrest	Royal View
Calgary	Irma	Sarcee Camp
Camrose	Lacombe	Spruce Grove
Champion	Lamont	St. Albert
Coalhurst	Lethbridge	Stettler
Cochrane	Lethbridge jail	Taber
Coleman	Little Bow River	Vegreville
Commerce	Macleod	Vermillion
Cooking Lake	Medicine Hat	Vulcan
Didsbury	Monarch	Wainwright
Edmonton	Mundare	Wetaskiwin

The water supplies of the province require each year greater attention than they have required in the previous year. It is probably the most important work with which this department has to deal, and as much time as possible is being devoted to it. On account of some of our officials having gone to the war, the office has been more or less short-handed during the year. It has been the aim to carry on the whole work as far as possible, and present health conditions indicate satisfactory work on the part of the department. There is an increasing tendency on the part of our smaller towns and villages to instal sanitary works, and lack of capital alone prevents their beginning such. When present conditions change, great activity may be expected to occur in the smaller towns with regard to water installation and sewerage systems.

In the future, the spending of unnecessarily large amounts by local authorities on sanitary works, can be more easily prevented than has been the case in the past owing to the wide powers given to the Public

Utility Commission in the new Public Utilities Act to control and supervise expenditures for public works. The work of the provincial board and that of the Public Utilities Commission are complementary to each other, the former controlling the design, construction, maintenance, operation and approximate cost of sanitary works and the latter determining the question of the amount a local authority can afford to spend on any particular work and supervising the spending of the sum authorized.

The Provincial Sanitary Engineer is the technical advisor to the Provincial Board of Health; and in sanitary engineering matters he is also the technical advisor to the Public Utility Commission. This arrangement appears to be a good one for the furtherance of the work of both bodies and for the efficient and economical carrying out of the provisions of both acts.

This year has shown a very important advance in the matter of improved methods of sewage disposal. The treatment of sewage by forced aeration in the presence of activated sludge is rapidly emerging from the promising to the established stage.

During the past two years samples of water, etc., sent to the Provincial Laboratory have received much more careful and prompt attention than hitherto, and by reason of improved arrangements there it is now considered possible to continue this year a systematic water survey of the cities, towns and villages of the province, this with a view to heading off possible outbreaks of typhoid, and generally to obtain information concerning our water supplies.

Data in connection with the present standing of the various cities, towns, etc., will be added to this report at a later date. It is not now available owing to the delay in the receipt of some of the annual reports.

The usual advisory and other routine work in connection with the provincial board, and the administration of the Public Health Act, has been duly attended to.

Respectfully submitted,

R. B. OWENS, B.A., B.E.

Provincial Sanitary Engineer.



CLASS IN COOKING AT SCHOOL OF AGRICULTURE.

REPORT OF THE DIRECTOR OF THE PROVINCIAL LABORATORY

TO THE BOARD OF GOVERNORS,
OF THE UNIVERSITY OF ALBERTA,
Edmonton South, Alberta.

SIR,—I have the honor to submit the following report of the work of the Provincial Laboratory for the year 1916.

The Provincial Laboratory carries out most of the technical work of the Government in public health, medico-legal investigations, diseases of animals, and miscellaneous examinations.

Public Health investigations relate to the diagnosis of some communicable diseases, the examination of water samples, and analysis of food, including milk.

During 1916 examinations were made for the diagnosis of diphtheria, typhoid fever, and pulmonary tuberculosis as shown in the following table:

SPECIMENS EXAMINED FOR THE DIAGNOSIS OF COMMUNICABLE DISEASES.

DISEASE	No of Specimens	Results		Specimens Sent From		Number of Specimens Received Each Month				
		Positive	Negative	No. of Physicians	No. of P.O's	Month	Sputum	Diph	Typh'd	Total
Pulmonary Tuberculosis	77	307	...	...	Jan.	33	34	7	74
						Feb.	41	31	5	77
						Mar.	43	57	3	103
						Apr.	38	20	6	64
Diphtheria	50	268	...	...	May	33	29	11	73
						June	38	32	11	81
						July	24	16	9	49
						Aug.	20	11	7	38
Typhoid Fever	77	71	...	...	Sept.	27	23	8	58
						Oct.	5	15	9	49
						Nov.	28	30	4	62
						Dec.	34	20	68	122
Total	204	646	161	58		384	318	148	850

During the past year 384 specimens of sputum were received for examination. Some of these specimens have not been reported because the sender neglected to give any information that would lead to his identification; notwithstanding the fact that there are data cards with every outfit, and that all information possible is requested, 229 of these specimens had no diagnosis, of these, 37 were found to contain the tubercle bacillus. A table has been made comparing the clinical diagnosis with the laboratory findings and is as follows:

COMPARISON BETWEEN CLINICAL DIAGNOSIS AND LABORATORY FINDINGS.

	Neg. Result with positive diag.	Pos. Result with diag. other than T. B.	Pos. Result with Pos. diag.	Pos. Result with no diag.	Neg. Result with diag. other than T. B.	Neg. Result with no diag.
January	3	..	3	3	7	17
February	9	1	4	2	6	19
March	9	..	2	..	9	23
April	6	..	3	3	9	17
May	5	..	2	3	3	20
June	8	..	5	3	7	15
July	2	1	5	3	3	10
August	4	..	2	4	1	9
September	3	..	1	8	..	15
October	4	..	2	1	3	15
November	5	1	6	1	5	10
December	2	..	2	6	2	22
Total	60	3	37	37	55	192

Notwithstanding the fact that attention was called to a similar condition in the last Annual Report, 60 per cent. have neglected to give us the information requested during the past year. The total number of specimens submitted for examination is small compared with the probable number of individuals with pulmonary tuberculosis, or suspected pulmonary tuberculosis in the Province. Tuberculosis experts tell us that for every death from this disease there are eight persons suffering from it. Last year in the province 265 deaths were recorded in the Vital Statistics Department. If we multiply this by eight we find that there are over 2,000 persons suffering from tuberculosis in the Province. Each open case, it is believed, infects one other. One can easily see the menace which exists in Alberta. The medical men, unfortunately, are not giving the Health Department a fair show in its efforts to reduce the number of deaths from this preventable disease.

In 1915 there were 531 throat swabs sent in for examination and 132 of these were positive. During the last year there were only 318 specimens with 50 positive. We would like to call the attention of the physicians again to the fact that the Laboratory gives either a telephonic or a telegraphic report, at its expense, if the specimens are found to be positive for diagnosis.

Anti-typhoid Vaccine for the inoculation of Alberta Overseas troops was prepared during the last two years for the Militia Department of Canada; 80,000 doses have so far been supplied. At present it is being prepared for the Provinces of British Columbia and Saskatchewan as well. The Laboratory is prepared to supply anti-typhoid vaccine, at a minimum cost, to municipalities and corporations within the province.

There were 50 samples of milk submitted for a Bacteriological examination.

In June the Laboratory announced that it would examine mothers' milk as a Public Health measure, and consequently free of charge. Its effort to assist the physician in this regard apparently was not appreciated, as only 31 specimens have been examined during the past six months; of these, 30 were from the City of Edmonton.

598 samples of water were analysed to ascertain its suitability for domestic purposes. An epidemic of typhoid fever in Lethbridge and smaller places gave rise to a great number of cases and on investigation it was found that this river was polluted. Since March weekly examinations have been made of the Lethbridge water and of that from Medicine Hat and Red Deer. The Laboratory also gave instructions to the Sanitary Inspector of Lethbridge in the routine Bacteriological examination of water. This city is now installing a laboratory for the examination of its water supply. A circular letter was sent to a number of towns in the province asking for their cooperation in having a series of samples of their drinking water analysed, and from the majority of these it received no reply. The Laboratory also published a Bulletin and in it mentioned that it furnished containers for the Bacteriological and Chemical analysis of milk and water together with instructions for sampling, and the only expense to the interested parties was the express on these both ways. You will also note that the Laboratory has analysed 202 more samples of water during 1916 than 1915.

114 Bacteriological sewage examinations were made for the Experimental Plant of the City of Edmonton.

The following Chemical examinations were made by Mr. Kelso, M.Sc., Director of the Industrial Laboratories and Analyst of the Provincial Laboratory, University of Alberta:

Water Analysis	301	samples
Liquors, Beers	116	"
Opiums	11	"
Fruits, Food, etc.	15	"
Medico-Legal Examinations, as stomachs, etc.	72	"
Pills, Bougies, etc.	16	"
Miscellaneous Examinations, as oil, chloride of lime, zinc, vanilla, coffee, saltpetre, feed, silage, sewage, fertilizer, milk, preservatives, adulterated milk, cocaine, morphine..	106	"
Milks	25	"
Total	662	"

These comprise to a great extent examinations carried on in assisting the Department of the Attorney General in criminal and liquor license branches.

The water examinations include waters from towns and cities, and from farmers throughout the Province, to ascertain the suitability for domestic supply.

A great deal of consulting chemical work was also done by Mr. Kelso in connection with public health, legal cases and industrial results. He had also to be present in many court cases in various parts of the province.

I have the honor to be, Sir,

Your obedient servant,

HEBER C. JAMIESON,

Acting Director.

H. M. TORY,

For Board of Governors.



CLASS IN COOKING AT SCHOOL OF AGRICULTURE

**REPORT OF THE PROVINCIAL MEDICAL OFFICER
OF HEALTH AND DEPUTY REGISTRAR
GENERAL**

SIR,—I beg herewith to submit the report of the Public Health Branch of the Department of Agriculture for the year 1916.

It is very gratifying to be able to say that the health of the province for 1916 in respect to infectious diseases (with the exception of an almost province-wide epidemic of measles, and the typhoid outbreak at Lethbridge) has been, on the whole, exceptionally good, and this has been fortunate, as the department has been depleted on account of war service of most of its experienced men. Owing to the continuance of the war, Dr. Laidlaw, Provincial Medical Health Officer, and Dr. Rankin, Provincial Bacteriologist, are still at the Front; and judging from the present status of war conditions, their return must not be looked for for some time yet. During the year, in addition to the above absentees, the Board lost the services of Dr. V. E. Barrow, who was granted leave of absence, and who was engaged in sanitary work at Sarcee Camp. Also Dr. Russell Boyle resigned to take up further medical studies, and is now engaged in active practice in the province.

The department was fortunate in securing the services of Dr. J. D. Lafferty, and with his aid, plus the fact of a minimum amount of infectious disease, the Board has progressed as much as possible along health lines. Mr. A. D. Lamont was also added to the staff, and he has done good work helping to control sanitary conditions and also in other branches of the work, outside of strictly health work, so that his services have been of material assistance.

The Provincial Board have had meetings from time to time to discuss various matters, and all matters coming up between the Board and the public have been amicably adjusted and settled to the mutual satisfaction of all.

The issuance of our Bulletin, inaugurated last year, is still continuing and is proving of service, and is meeting with commendations.

For the purpose of education and instruction along health lines, during the year, we purchased a health film dealing with tuberculosis, and it is being exhibited in various moving picture theatres throughout the province. This educative feature is winning the approval of not only the medical profession, but is much favoured by the press and laity, and we hope in the future to be able to extend this valuable method of bringing health matters forcibly to the attention of the public.

The following is a synopsis of the work of the Provincial Board for the year 1916 in respect to infectious diseases:

STATISTICAL TABLE.

	Within Municipalities	Without Municipalities	Total 1916	Total 1915
Scarlet fever	71	48	119	194
Typhoid fever	280	28	308	284
Diphtheria	177	41	218	163
Small-pox	4	4	8	72
Chicken-pox	877	43	920	477
Measles	3311	242	3553	2656
Whooping cough	545	18	563	268
Mumps	188	7	195	144
Tuberculosis	137	37	174	163
Infantile paralysis	16	3	19	...
Other diseases	82	1	83	103

Scarlet Fever.—In 1915 there were 194 cases reported, and in 1916, 119 cases. This is quite a material reduction from last year, and is very gratifying in view of the very often seriousness of this disease, especially in connection with complications.

Typhoid Fever.—There has been a slight increase from last year, which was a very low year. 284 cases were reported in 1915 and 308 cases in 1916. This increase was due to the fact of the outbreak at Lethbridge, where there were 123 cases reported. Leaving this city's typhoid out, the typhoid generally throughout the province gives a better report than previous years. The outbreak at Lethbridge was no doubt due to the fact that a very prolonged and sudden chinook broke up the river, and not only swept down the contents of the river but also swept into the river any excreta which might have been deposited on the banks. Lethbridge has had several outbreaks of a smaller nature, and has been warned of their danger, but they are now taking adequate measures to control the situation in the future by installing a water filtration plant.

The larger cities of Edmonton and Calgary have been singularly free of typhoid, as have also the rural districts, and in no place has there been any extensive outbreak beyond the above named; and as was the case last year, most of these cases of typhoid, even outside of Lethbridge, have been in the southern part of the province.

Diphtheria.—There has been an increase from 163 in 1915 to 218 in 1916, but even this number is not large, considering the large extent of the province, and there have been no large epidemics of the disease in any place.

Small-pox.—The reduction of this disease has been very marked. In 1915 there were 72 cases, which in itself is not large in consideration of the fact that we have such a large boundary line to the south, and that some of the States have no quarantine for small-pox, the reason being, I understand, that they claim there is absolute protection in vaccination against small-pox, and if people will not be vaccinated they will have to take the consequences. However, in 1916, we had only 8 cases reported, which is a very fine record indeed, and is, I think, the minimum since the establishment of the province. The few cases of small-pox have been mild and no deaths have occurred.

Tuberculosis.—In 1915 there were 163 cases reported, and in 1916, 174. This is an increase in the number reported, but unfortunately the reports of this disease are very inadequate, as shown by the fact that last year there were very many more deaths reported than cases. However, we have reason to believe that the reporting of all infectious diseases is improving somewhat, but the fact of 174 cases last year and only 163 the year before, does not necessarily mean that the disease is increasing, but that the reporting is better. At the same time, this disease is far too prevalent within the province.

Measles.—In 1915 there were 2,356 cases reported, and 3,553 in 1916, an increase of about 45%. This is considerable of an increase, and I do not think that this number anywhere represents the actual number of measles within the province. This disease is one which the laity apparently does not regard seriously, but it is one of the most serious diseases we have, on account of the complications, such as pneumonia and bronchitis, from which a great many die; besides it may be the initial starting point of active tubercular trouble.

Infantile Paralysis.—One disease which has been of peculiar interest this year on account of its fatal or crippling effects, is that of infantile paralysis. We had no cases in 1915 and in 1916 there were 19 reported. However, this is very few considering the number of cases in the eastern states and provinces.

Chicken-pox.—In 1915, 477; in 1916, 920.

Mumps.—In 1915, 144; in 1916, 195.

Whooping Cough.—In 1915, 268; in 1916, 563.

Other Diseases.—In 1915, 103; in 1916, 83.

Sanitation.—More interest is being taken by Local Boards and also by the public in this important branch of public health work. Good water supplies, closet sanitation, and better control of the disposal of garbage and manure (thus helping to prevent fly-breeding) are subjects the importance of which the Board is trying to impress upon the public.

This year the Board personally supervised the sanitation of Sarcee City, which is adjacent to Sarcee Camp, and we have had very high commendations of our control of this place and of the Board's assistance to the military authorities in disposing of the sewage of the camp. It is also most gratifying to know that outside of a few cases of typhoid among the Battalion from Red Deer, not a single case of typhoid developed within the camp. This no doubt was largely due to the fact that typhoid vaccine was almost universally used; but no doubt the good sanitary control of the camp and adjacent surroundings had a beneficial effect.

Hospitals.—Thirty-seven hospitals received the government grant of 25c per patient per day, the total sum paid for the year being \$92,085.95.

Incurables.—\$8,620.63 was expended on Incurables in 1916. This includes the keep of eleven Incurables at Medicine Hat General Hospital, eight at Athabasca Hospital, and thirteen at Daysland Hospital.

Destitutes.—\$9,471.54 was spent on Destitutes. This includes the keep of thirteen destitutes at Lacombe Home at Midnapore, and also the burial of destitutes.

REPORTS OF THE INSPECTORS.

Dr. Lafferty's Report: The location of the Military camp at the Sarcee Reserve, and the disposal of the sewage from 10,000 men was a very serious problem, and I am pleased to be able to report that the system devised by the Provincial Board of Health was most effective, inexpensive and entirely satisfactory to all concerned. I made the following visits in connection with sanitation:

Pincher Creek	May 20, Aug. 31	Sarcee Camp	July 12, 14, 15, 21, 30, 31
Cochrane	June 8		Aug. 2, 8, 14, 16, 17, 26, Sept. 12
Calgary Suburbs ...	June 21, 24, July 7	Banff	July 20

The following visits were made in connection with infectious diseases:

Typhoid fever	High River	June 6
"	Okotoks	Sept. 8
"	Vulcan	Sept. 9
Small-pox	Winnifred	June 9, 10, 11, 27, 28, 29
Chicken-pox	Cochrane	Oct. 11

The following hospitals were visited:

Salvation Army Hospital, Calgary	July 11
Mount View	July 11
Smallpox	July 12
General	July 12
Isolation	July 13
Memorial	Pincher Creek
General	High River
"	Medicine Hat
"	Macleod
Galt General	Lethbridge

I visited the Lacombe Home at Midnapore, and the Galt Hospital at Lethbridge to examine a reported incurable case in each Institution.

I had occasion to attend several important conferences with Mr. R. B. Owens, Provincial Sanitary Engineer, and the different municipal bodies in the province, and was very much impressed with the favorable attitude of these bodies towards the Provincial Board. They expressed themselves as having every confidence in the Board and fully recognized and appreciated the splendid work which they were doing in the interests of the health of the province.

(Sgd.) J. D. LAFFERTY.

Temporary Medical Inspector of Health.

Mr. A. D. Lamont's Report: I visited the following places in connection with sanitation:

Edson	May 3	Munson, Hanna, Youngstown	
Coalspur and Lovett	May 3, 4, 5	and Chinook	May 17 to 20 incl.
McLennan, Spirit River and		Clyde and Eunice	June 2, 3
Grande Prairie ..	May 8 to 13 incl.	Bentley	June 6
Drumheller	May 16	Stony Plain	Sept. 19, 20
		Alliance and Forestburg	Sept. 26 to 30

In connection with destitution:

Sundre	May 1	Lac la Biche	June 13, 16
Olds	May 27 to 29, June 7 to 9	Athabasca	June 21 to 24
	July 6 to 10	Lamont	Oct. 11, 12
Innisfail	May 30, 31	Kevisville	Nov. 1
Rimby	June 1		

In connection with checking hospital returns:

Edmonton..	June 20, July 11, 12, 13, 24	Castor	Aug. 2
	25, Aug. 29, 30, 31, Sept. 12, 13, 14, 25	Coronation	Aug. 3, 4
Athabasca	July 14, 15	Camrose	Aug. 8
Trochu	July 17, 18	Daysland	Aug. 9, 10, 11
Vegreville	July 21, 22	Lamont	Sept. 1, 2
Onoway	July 26	Pakan	Sept. 7, 8, 9
Wetaskiwin	July 27	Nordegg	Sept. 11
Red Deer	July 28, 29	Lacombe and Consort	Sept. 18
Lacombe	Aug. 1		

(Sgd.) A. D. LAMONT,

Temporary Inspector of Health.

Respectfully submitted,

T. J. NORMAN,

Provincial Medical Officer of Health, pro tem.

ANNUAL REPORT, 1916.

VITAL STATISTICS.

SIR,—Following is the report of the Registrar-General's Department for the year 1916. This report deals with the number of Births, Marriages and Deaths which occurred within the province during that year and which were registered with the Department.

The number of Births recorded is 13,331 as against 13,452 for the preceding year, a decrease of only 121. This number is also only 354 less than the number recorded for 1914, the first year of the war, it is therefore a matter for congratulation that the birth rate of this province has not appreciably decreased despite the economic conditions caused by the present conflict.

The number of marriages recorded is 4,230, a total increase of 28 over the year 1915.

The increase amongst Canadian-born bridegrooms is 69. The increase for bridegrooms born in the United States of America is 65, whilst the increase amongst the foreign-speaking bridegrooms numbers 50. These increases, however, are practically counterbalanced by the decrease amongst the British-born, which amounts to 156 compared with the previous year. This decrease can doubtless be attributed to the war.

The number of deaths recorded as having occurred during 1916 is 4,058. This is an increase over the year 1915 of 470. The year 1915, however, was exceptionally light as regards deaths, and although the number of deaths which occurred in 1916 is greater than the number for 1915, it is less than for the years 1914, 1913 and 1912. It is a matter for regret that the number of children who die under one year of age still remains at a high figure, the number for the year 1916 being 1,207, constituting 90.5 per 1,000 of the births. Apart from the diseases of early infancy the greatest number of deaths were the result of Pneumonia, which accounted for 453 persons, and is an extraordinary increase over the preceding year when the deaths by this disease were 312. The deaths by Pulmonary Tuberculosis were 297 compared with 265 for the year 1915.

The number of Stillbirths recorded is 305, as against 307 for the year 1915. These stillbirths are not included in any table referring to births or deaths.

VITAL STATISTICS, 1905 TO 1916, INCLUSIVE.

Year	Births	Marriages	Deaths	Totals
1905	421	187	114	722
1906	3,033	927	1,091	5,051
1907	4,732	1,907	1,578	8,217
1908	5,973	2,032	2,188	10,193
1909	6,897	2,384	2,662	11,943
1910	8,231	3,086	3,526	14,843
1911	8,813	3,630	3,618	16,061
1912	10,284	4,429	4,232	18,945
1913	11,871	5,053	4,432	21,356
1914	13,685	4,623	4,147	22,455
1915	13,452	4,202	3,588	21,242
1916	13,331	4,230	4,058	21,619

TOTAL REGISTRATIONS RECEIVED OF ALL BIRTHS, MARRIAGES AND DEATHS FOR EACH MONTH OF THE YEAR 1916.

Months	Births	Marriages	Deaths
January	1,195	342	421
February	1,053	403	364
March	1,197	359	431
April	1,152	335	386
May	1,173	305	338
June	1,066	454	319
July	1,031	322	330
August	1,104	337	310
September	1,074	286	287
October	1,031	247	280
November	1,180	368	274
December	1,075	472	318
Totals	13,331	4,230	4,058

REGISTRATIONS BY ELECTORAL DISTRICTS FOR THE YEAR 1916.

BIRTHS.

Electoral Districts	Male	Female	Total
Acadia	129	152	281
Athabasca	48	66	114
Alexandra	57	52	109
Beaver River	125	135	260
Bow Valley	44	31	75
Camrose	172	142	314
Calgary South (exclusive of city) ..	..	1	1
Calgary North (exclusive of city) ..	2	4	6
Cardston	69	65	134
Claresholm	23	47	70
Clearwater	14	9	23
Cochrane	39	38	77
Coronation	118	114	232
Didsbury	135	105	240
Edmonton South	34	35	69
Edson	84	77	161
Gleichen	103	85	188
Grouard	57	60	117
Hand Hills	121	116	237
High River	42	54	96
Innisfail	46	62	108
Lacombe	70	60	130
Lac Ste. Anne	73	79	152
Leduc	128	93	221
Little Bow	98	80	178
Lethbridge District	23	26	49
Macleod	50	45	95
Medicine Hat District	132	124	256
Nanton	34	43	77
Okotoks	33	27	60
Olds	75	67	142
Peace River	76	56	126
Pembina	58	41	99
Ponoka	72	51	123
Pincher Creek	38	31	69
Redcliff	93	78	171
Red Deer	95	86	181
Ribstone	115	100	215
Rocky Mountain	107	130	237
St. Paul	126	120	246
St. Albert	89	93	182
Sedgewick	137	111	248
Stettler	155	139	294
Stony Plain	63	64	127
Sturgeon	118	122	240
Taber	163	150	313
Vermilion	171	164	335
Victoria	131	131	262
Vegreville	224	208	432
Warner	41	42	83
Wainwright	72	70	142
Wetaskiwin	58	69	127
Whitford	267	257	524
Calgary City	1,010	939	1,949
Edmonton City	848	751	1,599
Medicine Hat City	207	190	397
Lethbridge City	164	174	338
Total	6,870	6,461	13,331

REGISTRATIONS BY ELECTORAL DISTRICTS FOR THE YEAR 1916 BY MONTHS.

	BIRTHS.													
Electoral Districts	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
Acadia	13	18	17	25	27	20	16	40	20	27	32	26	281	
Athabasca	15	9	13	8	11	4	12	8	4	13	12	5	114	
Alexandra	10	9	13	9	6	11	17	10	7	6	5	6	109	
Beaver River . . .	26	23	23	19	31	17	20	21	22	20	21	17	260	
Bow Valley	6	2	3	7	3	5	3	8	3	6	12	17	75	
Camrose	32	27	31	22	19	22	23	24	26	32	28	28	314	
Calgary South. (Ex. of City) . . .	1	..	..	..	..	..	..	..	..	..	..	..
Calgary North. (Ex. of City) . . .	..	..	..	..	..	2	1	1	..	1	..	1	6
Cardston	14	15	11	9	17	13	10	8	8	15	5	9	134	
Claresholm	5	5	4	2	1	6	10	5	8	7	8	9	70	
Clearwater	1	3	5	2	3	..	3	..	3	2	1	..	23	
Cochrane	7	5	8	8	7	5	6	7	8	4	8	4	77	
Coronation	14	14	19	22	24	21	22	27	17	18	14	20	232	
Didsbury	20	20	20	17	20	14	18	25	29	16	22	19	240	
Edmonton S. . . .	2	8	13	4	6	2	4	1	8	5	6	10	69	
Edson	17	14	25	14	15	11	10	15	11	6	11	12	161	
Gleichen	15	10	13	19	27	26	12	13	13	17	11	12	188	
Grouard	10	11	9	11	10	14	17	8	13	4	7	3	117	
Hand Hills	25	19	19	21	19	18	20	24	12	14	21	25	237	
High River	8	7	8	11	7	9	11	6	5	5	8	11	96	
Innisfail	7	8	14	7	7	8	7	10	7	13	12	8	108	
Lacombe	10	8	9	12	16	11	12	12	10	8	13	9	130	
Lac Ste. Anne . . .	10	14	12	14	21	6	12	10	11	12	13	17	152	
Leduc	24	19	27	12	22	9	15	17	27	15	16	18	221	
Little Bow	23	13	13	11	21	19	13	12	10	15	16	12	178	
Lethbridge Dis. . .	4	1	3	4	3	1	6	3	7	3	9	5	49	
Macleod	10	8	7	10	12	5	8	7	6	6	12	4	95	
Med. Hat Dis. . . .	21	14	20	30	23	17	20	18	24	29	17	23	256	
Nanton	7	7	5	6	5	6	9	10	5	6	3	8	77	
Okotoks	5	3	4	6	6	8	5	5	2	4	6	6	60	
Olds	14	8	13	16	18	10	15	9	9	13	9	8	142	
Peace River	5	13	5	13	8	17	13	16	10	10	8	8	126	
Pembina	7	7	9	10	3	9	5	10	8	8	10	13	99	
Ponoka	10	10	14	11	10	4	8	13	12	13	6	12	123	
Pincher Creek . . .	6	6	7	8	8	1	7	3	11	6	3	3	69	
Redcliff	12	14	14	14	21	16	14	17	7	14	17	11	171	
Red Deer	18	20	20	19	14	12	14	14	15	11	14	10	181	
Ribstone	24	23	22	19	17	15	16	11	18	12	16	22	215	
Rocky Mt.	17	20	23	26	15	23	19	23	21	16	19	15	237	
St. Paul	21	17	20	22	17	21	25	21	19	14	21	28	246	
St. Albert	16	15	21	13	15	13	13	13	14	17	17	15	182	
Sedgewick	24	15	21	21	24	23	27	19	18	20	11	25	248	
Stettler	29	23	25	22	29	22	27	32	15	24	20	26	294	
Stony Plain	9	12	17	5	6	15	10	18	12	10	7	6	127	
Sturgeon	30	16	19	24	15	21	12	18	26	20	18	21	240	
Taber	27	18	30	31	35	34	31	19	18	19	23	28	313	
Vermilion	42	22	42	37	28	21	35	20	22	25	16	25	335	
Victoria	26	21	28	27	22	16	28	32	18	15	11	18	262	
Vegreville	44	34	31	37	46	36	43	32	33	30	36	30	432	
Warner	5	7	8	8	9	9	5	7	8	6	7	4	83	
Wainwright	17	12	8	9	10	22	12	10	8	10	11	13	142	
Wetaskiwin	10	14	10	14	7	8	13	11	14	8	11	7	127	
Whitford	48	46	46	40	55	41	42	54	47	36	46	23	524	
Calgary City	160	145	167	177	148	163	168	165	149	164	172	171	1,949	
Edmonton City . . .	147	135	150	127	148	124	139	113	142	116	145	113	1,599	
Med. Hat City . . .	41	40	40	26	35	31	22	19	42	40	26	35	397	
Lethbridge C. . . .	34	26	29	34	21	29	26	30	32	25	31	21	338	
Total	1195	1053	1197	1152	1173	1066	1031	1104	1074	1031	1180	1075	13,331	

BIRTHS BY ELECTORAL DISTRICTS DURING THE YEAR 1916 BY
NATIONALITY OF PARENTS.

DISTRICTS	Canadian	British	U. S. A.	Foreign	Mixed	Unknown	Total
Acadia	94	60	55	34	38	..	281
Athabasca	60	21	10	11	12	..	114
Alexandra	32	40	7	15	15	..	109
Beaver River	156	5	18	64	17	..	260
Bow Valley	19	14	16	16	10	..	75
Camrose	58	18	81	127	30	..	314
Calgary South ex. of city.	1	..	..	..	..	..	1
Calgary North ex. of city.	2	2	..	1	1	..	6
Cardston	10	8	83	14	19	..	134
Claresholm	10	13	21	14	12	..	70
Clearwater	15	3	1	2	2	..	23
Cochrane	26	24	10	3	11	..	77
Coronation	64	38	32	58	40	..	232
Didsbury	62	46	45	39	48	..	240
Edmonton South	9	17	5	26	12	..	69
Edson	26	42	18	54	21	..	161
Gleichen	45	48	34	33	28	..	188
Grouard	98	5	3	3	8	..	117
Hand Hills	48	41	47	60	41	..	237
High River	41	15	20	6	14	..	96
Innisfail	25	34	14	11	24	..	108
Lacombe	18	32	25	20	35	..	130
Lac St. Anne	51	36	16	30	19	..	152
Leduc	31	10	22	131	27	..	221
Little Bow	41	24	49	33	31	..	178
Lethbridge District	10	14	1	21	3	..	49
Macleod	36	28	13	7	11	..	95
Medicine Hat District ..	16	9	30	179	22	..	256
Nanton	29	14	14	6	14	..	77
Okotoks	23	19	6	5	7	..	60
Olds	31	20	26	35	30	..	142
Peace River	64	10	13	25	14	..	126
Pembina	23	18	11	32	15	..	99
Ponoka	45	27	21	14	16	..	123
Pincher Creek	24	19	6	6	14	..	69
Redcliff	30	19	29	77	16	..	171
Red Deer	48	51	13	32	37	..	181
Ribstone	35	39	52	68	21	..	215
Rocky Mountain	31	92	3	98	13	..	237
St. Paul	163	3	16	48	15	1	246
St. Albert	95	7	14	27	38	1	182
Sedgewick	42	36	46	81	43	..	248
Stettler	59	50	61	58	66	..	294
Stony Plain	15	5	5	83	19	..	127
Sturgeon	28	35	28	134	15	..	240
Taber	44	48	102	64	55	..	313
Vermilion	43	30	9	238	15	..	335
Victoria	47	13	9	176	17	..	262
Vegreville	38	26	28	315	25	..	432
Warner	10	5	38	21	9	..	83
Wainwright	47	29	20	15	31	..	142
Wetaskiwin	8	16	12	69	22	..	127
Whitford	23	6	5	478	12	..	524
Calgary City	498	902	87	229	232	1	1,949
Edmonton City	456	650	74	211	205	3	1,599
Medicine Hat City	120	119	42	54	62	..	397
Lethbridge City	98	128	31	32	49	..	338
Total	3,321	3,083	1,500	3,743	1,678	6	13,331

MARRIAGES by Religious Denominations in Electoral Districts, 1916.

ELECTORAL DISTRICTS

	Sex	Religious Denominations															Totals
		Presbyterian	Methodist	Ruthenian	Catholic	Anglican	Roman Catholic	Lutheran	Baptist	Congregational	Salvation Army	Mennonite	Greek Catholic	Greek Orthodox	Moravian	Others		Not Stated
Acadia	M	16	19	..	..	2	3	9	..	..	..	1	..	..	..	3	1
	F	17	12	..	6	4	11	11	3	1	..	..	..	..	..	..	58
Athabasca	M	2	3	..	..	..	19	1	1	..	..	..	..	..	..	1	..
	F	1	3	..	7	21	..	..	1	..	..	..	..	..	..	1	34
Alexandria	M	9	..	..	..	1	..	1	2	..	..	..	..	..	..	..	2
	F	5	4	..	8	1	1	2	1	..	..	1	..	..	..	..	23
Beaver River	M	2	6	..	..	..	33	2	1	..	..	..	1	..	..	..	..
	F	..	8	..	1	1	22	2	1	..	..	..	1	..	..	..	45
Bow Valley	M	7	8	..	5	..	..	1	..	1	..	..	..	..	..	4	1
	F	10	5	..	2	1	2	1	1	..	..	..	..	..	..	1	27
Camrose	M	14	13	2	7	17	34	34	4	1	1	2	..	..	..	..	3
	F	11	12	2	6	20	36	36	3	1	1	1	..	..	4	1	98
Calgary North	M	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2
	F	1	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..
Cardston	M	2	..	..	2	..	..	..	..	1	..	23	..	1	2	3	..
	F	1	2	..	1	1	1	..	..	..	26	1	1	1	1	1	34
Charlton	M	9	13	..	1	1	1	..	..	..	..	..	..	..	1	2	39
	F	4	16	..	2	2	2	4	..	..	..	..	..	..	..	2	..
Clearwater	M	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..
	F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cochrane	M	4	3	..	1	1	..	..	..	..	..	..	..	..	..	..	4
	F	2	2	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Coronation	M	17	11	..	10	6	5	5	1	..	1	..	2	1	..	1	..
	F	12	17	..	11	6	6	6	1	..	1	..	6	1	..	2	60

Didsbury	M	16	10	..	5	2	6	1	1	3	..	1	..	9	1
	F	16	13	..	7	3	6	5	1	4	..	..	..	5	..
Edmonton South	M	2	2	..	..	..	8	..	..	..	..	2	..	..	1
	F	2	4	..	..	..	5	..	..	..	..	4	..	..	15
Edson	M	4	3	..	1	..	3	..	..	..	..	..	..	1	12
	F	2	3	..	1	2	2	1	..	..	1	..	..	..	..
Gleichen	M	2	3	..	5	3	..	2	..	..	..	..	..	1	16
	F	1	3	..	6	3	..	2	..	..	..	..	..	..	..
Grouard	M	..	3	..	2	14	1	..	..	..	..	..	..	1	21
	F	1	2	..	2	15	1	..	..	..	..	..	..	..	..
Hand Hills	M	11	14	..	4	4	1	3	..	1	..	..	..	3	..
	F	6	17	..	7	..	7	1	..	2	..	..	..	1	41
High River	M	6	8	..	4	1	2	2	..	..	..	..	..	..	23
	F	7	8	..	3	1	1	1	..	1	1	..	..	..	..
Innisfail	M	6	7	..	2	..	1	2	..	1	..	..	..	1	1
	F	5	6	..	4	1	1	1	..	1	..	..	..	..	21
Lacombe	M	15	14	..	5	3	6	4	..	..	2	..	..	3	..
	F	17	15	..	4	3	3	3	..	..	2	..	..	5	32
Lac Ste. Anne	M	1	5	..	2	6	2	4	..	..	..	..	..	2	2
	F	..	6	..	4	10	2	1	..	..	..	..	..	1	24
Leduc	M	2	1	1	..	9	4	3	..	..	1	..	8	2	31
	F	1	2	1	..	9	2	7	..	..	1	..	8	..	..
Lethbridge	M	5	7	..	1	4	2	..	..	..	..	..	..	1	20
	F	4	7	..	2	3	3	1	..	..	..	..	..	..	..
Lethbridge District	M	..	..	..	..	..	1	..	..	..	..	..	..	1	..
	F	..	..	..	..	..	1	..	..	..	1	..	..	..	2
Macleod	M	20	8	..	9	..	..	3	..	..	2	..	..	3	..
	F	18	9	10	1	2	..	..	..	..	..	..	..	1	43
Medicine Hat District	M	4	4	..	3	4	15	1	..	..	..	..	..	6	..
	F	4	2	..	1	4	15	3	1	1	..	..	..	6	37
Nanton	M	3	6	..	4	1	1	1	1	..	..	..	..	1	..
	F	5	7	..	2	..	1	1	..	..	..	..	..	..	17
Okotoks	M	4	2	..	6	3	..	..	..	..	..	..	..	..	..
	F	5	2	..	3	3	..	1	..	..	..	..	..	..	14

MARRIAGES by Religious Denominations in Electoral Districts, 1916. Continued

ELECTORAL DISTRICTS	Sex	Religious Denominations.														Totals	
		Presbyterian	Methodist	Ruthenian Catholic	Anglican	Roman Catholic	Lutheran	Baptist	Congregational	Salvation Army	Mennonite	Mormon	Greek Catholic	Greek Orthodox	Moravian		Others	Not Stated
Olds	M	11	12	..	4	5	6	1	..	..	..	..	..	..	..	4	..
	F	8	16	..	4	5	5	9	1	..	..	..	..	..	..	5	..
Peace River	M	4	5	..	6	14	2	2	..	..	..	..	..	..	..	..	..
	F	3	4	..	6	14	5	1	..	..	..	..	..	..	..	..	..
Pembina	M	2	2	1	5	5	1	1	..	..	..	..	..	..	..	2	1
	F	3	3	..	6	5	1	1	..	..	..	..	..	..	..	1	..
Ponoka	M	4	10	..	3	9	..	1	1	..	..	..	..	..	..	1	..
	F	3	6	..	3	10	3	4	..	..	..	..	..	..	..	4	..
Pincher Creek	M	3	4	..	3	3	1	1	..	..	..	..	..	..	..	..	..
	F	4	4	..	3	4	..	..	..	..	..	..	..	..	..	..	..
Redcliff	M	4	10	..	2	2	9	2	1	..	..	..	..	..	..	4	3
	F	6	7	..	..	3	10	3	2	..	..	..	..	..	..	5	..
Red Deer	M	30	14	..	12	7	9	6	1	1	..	..	..	..	..	1	1
	F	28	13	..	11	5	13	9	1	1	..	..	..	..	..	..	..
Ribstone	M	4	13	..	11	8	15	1	..	..	..	..	..	..	..	5	6
	F	3	13	..	10	11	11	5	2	..	..	..	..	..	..	4	4
Rocky Mountain	M	17	6	1	15	19	5	1	..	..	..	..	..	..	..	..	1
	F	17	8	1	18	20	3	1	..	..	..	..	..	..	..	..	1
St. Paul	M	2	2	..	..	24	2	1	..	..	..	..	..	..	..	..	..
	F	..	3	..	1	24	1	1	1	..	..	..	..	..	..	..	..
St. Albert	M	1	..	..	..	28	1	..	..	..	..	..	..	..	..	..	..
	F	1	..	..	..	29	..	..	..	..	..	..	..	..	..	..	..
Sedgewick	M	5	11	1	5	4	9	3	..	..	..	..	..	..	..	1	2
	F	6	10	1	5	5	9	4	1	..	..	..	..	..	..	..	1

Settler	15	21	13	10	14	8	6	2	1	1	1	3	10	95
Stony Plain	12	20	24	6	15	3	1	2	2	1	1	8	7	95
Sturgeon	M	5	4	1	9	2	1	1	1	1	1	1	1	15
Taber	M	5	12	4	5	2	3	1	1	1	1	4	1	27
Vernilion	M	17	8	18	8	9	2	1	1	1	1	1	1	69
Victoria	M	9	5	5	2	8	3	1	1	1	1	3	1	56
Vegreville	M	8	5	34	7	31	10	2	1	1	1	2	2	131
Warner	M	1	1	1	4	2	1	1	1	1	1	1	1	10
Wainwright	M	7	9	12	4	4	1	1	1	1	1	1	1	28
Wetaskiwin	M	8	9	4	6	20	1	1	1	1	1	1	1	51
Whitford	M	4	6	11	11	1	1	1	1	1	1	1	1	86
Calgary City	M	285	183	4	223	89	50	56	13	4	3	2	42	915
Edmonton City	M	200	128	25	177	91	68	59	7	4	1	17	3	848
Medicine Hat City	M	54	34	35	24	36	8	1	1	1	1	14	1	141
Lethbridge City	M	43	43	28	26	19	9	3	1	1	1	6	3	197
Total	1837	1475	200	1357	1229	833	477	86	29	25	25	25	25	1229

MARRIAGES by Ages in Electoral Districts, 1916.

ELECTORAL DISTRICTS	Sex	Ages										Total
		15 to 16	16 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 59	60 and over	
Acadia	M	..	..	13	25	12	2	2	..	4	..	58
	F	..	15	29	6	2	3	3	..	..	..
Athabasca	M	..	3	15	9	5	2	..	..	..	..	34
	F	..	18	8	5	3	..	..	..	..	..
Alexandra	M	..	..	7	9	3	1	..	3	..	..	23
	F	..	8	11	..	3	1	..	..	..	..
Beaver River	M	..	1	11	19	5	5	4	..	..	..	45
	F	1	23	14	5	1	1	..	..	..	..
Bow Valley	M	..	..	7	12	1	7	..	..	..	..	27
	F	..	9	9	4	3	1	1	..	..	..
Camrose	M	..	1	28	42	10	10	4	2	1	..	98
	F	..	35	35	16	4	6	1	1	..	..
Calgary North	M	..	..	..	1	1	..	..	..	..	..	2
	F	..	..	..	1	..	1	..	..	..	..
Cardston	M	..	1	15	15	1	..	..	..	1	1	34
	F	..	11	17	4	..	..	..	..	2	..	
Claresholm	M	..	..	9	8	7	2	3	1	..	..	30
	F	..	9	14	4	1	2	..	..	..	..
Clearwater	M	..	1	1	2	..	..	..	..	..	..	4
	F	1	1	2	..	..	..	..	..	..	..
Cochrane	M	..	..	4	1	3	1	..	..	..	..	9
	F	..	2	4	1	2	..	..	..	..	..
Coronation	M	..	1	17	20	12	5	2	..	2	1	60
	F	..	13	28	11	3	4	1	..	..	..
Didsbury	M	..	1	19	22	10	4	1	2	1	1	61
	F	1	20	25	11	..	1	1	..	2	..	
Edmonton South ...	M	..	2	5	6	2	..	..	..	..	..	15
	F	..	8	5	1	..	1	..	..	..	..
Edson	M	..	..	1	8	1	1	..	1	..	..	12
	F	..	5	2	2	1	2	..	..	..	..
Gleichen	M	..	1	10	5	..	..	..	..	..	..	16
	F	..	6	6	3	1	..	..	..	..	..
Grouard	M	..	2	8	7	2	1	1	..	..	..	21
	F	1	10	4	4	..	1	..	..	1	..	
Hand Hills	M	..	..	6	24	6	2	2	..	1	..	41
	F	..	12	20	6	1	1	1	..	..	..
High River	M	..	..	6	13	3	..	1	..	..	..	23
	F	..	6	10	5	1	1	..	..	..	..
Innisfail	M	..	..	9	7	3	1	1	..	..	..	21
	F	..	5	10	3	2	1	..	..	..	..
Lacombe	M	..	1	17	26	2	2	2	..	1	1	52
	F	..	13	22	9	4	..	3	..	1	..	
Lac Ste. Anne	M	..	4	3	7	5	4	1	..	..	..	24
	F	2	11	7	2	1	1	..	..	..	..
Leduc	M	..	2	14	8	6	1	..	..	..	..	31
	F	..	15	12	2	2	..	..	..	..	..
Little Bow	M	..	..	11	7	1	1	..	..	..	..	20
	F	..	8	9	2	1	..	..	..	..	..

MARRIAGES by Ages in Electoral Districts, 1916.—(Continued.)

ELECTORAL DISTRICTS	Sex	Ages										Total
		15 to 16	16 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 59	60 and over	
Lethbridge Dis. ...	M	..	..	1	1	..	..	..	..	..	..	2
	F	..	1	..	1	..	..	..	..	..	..	..
Macleod	M	..	1	10	15	9	4	..	2	2	..	43
	F	..	5	23	8	5	..	1	1	..	..	..
Medicine Hat Dis.	M	..	1	13	12	10	..	1	..	..	..	37
	F	1	17	13	2	3	..	1	..	..	..	..
Nanton	M	..	..	5	9	2	..	..	..	1	..	17
	F	..	4	7	5	1	..	..	..	..	..	..
Okotoks	M	..	..	5	3	4	1	1	..	..	..	14
	F	..	2	8	2	..	1	1	..	..	..	..
Olds	M	..	..	18	16	8	4	..	..	4	..	50
	F	..	14	21	8	3	..	1	..	3	..	..
Peace River	M	..	..	6	9	10	8	..	..	..	..	33
	F	1	9	13	4	4	2	..	..	..	..	..
Fembina	M	..	..	7	9	2	1	..	..	1	..	20
	F	..	11	6	..	1	1	..	..	1	..	..
Ponoka	M	..	1	19	7	2	2	..	1	..	..	32
	F	1	10	16	1	2	..	..	1	..	..	..
Pincher Creek	M	..	..	3	5	4	1	1	..	1	..	15
	F	..	3	7	4	1	..	..	..	..	..	..
Redcliff	M	..	..	10	16	7	1	2	..	..	1	37
	F	..	12	13	8	2	2	..	..	..	..	..
Red Deer	M	..	..	20	39	11	6	5	..	1	..	82
	F	..	24	40	10	4	3	1	..	..	..	..
Ribstone	M	..	2	19	19	17	3	1	2	1	..	64
	F	..	23	19	9	5	3	1	1	3	..	..
Rocky Mountain ..	M	..	..	14	29	16	6	2	2	1	..	70
	F	1	16	19	13	16	2	3	..	..	..	..
St. Paul	M	..	2	6	15	4	2	..	1	1	..	31
	F	1	16	6	2	3	1	1	..	1	..	..
St. Albert	M	..	..	12	10	4	3	..	..	1	..	30
	F	..	13	10	3	3	1	..	..	..	..	..
Sedgewick	M	..	..	11	18	7	3	1	2	2	..	44
	F	..	12	20	7	3	..	1	..	..	1	..
Stettler	M	..	1	25	40	19	6	2	2	3	..	98
	F	3	38	27	13	6	5	2	2	2	..	..
Stony Plain	M	..	..	6	7	2	..	..	..	..	..	15
	F	..	8	6	1	..	..	..	..	..	..	..
Sturgeon	M	..	..	6	11	7	3	..	..	..	..	27
	F	..	10	10	3	3	..	..	1	..	..	..
Taber	M	..	1	15	13	8	5	1	1	2	..	46
	F	..	15	17	7	5	2	..	..	..	..	..
Vermilion	M	..	..	23	28	14	2	..	..	2	..	69
	F	..	39	13	8	4	2	1	1	1	..	..
Victoria	M	..	1	26	16	4	1	1	..	1	..	50
	F	..	38	7	5	..	..	..	..	..	..	..
Vegreville	M	..	1	71	34	12	4	1	4	..	3	131
	F	..	91	24	3	7	2	1	1	..	2	..

MARRIAGES by Ages in Electoral Districts, 1916.—(Continued.)

ELECTORAL DISTRICTS	Sex	Ages										Total
		15 to 16	16 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 59	60 and over	
Warner	M	..	..	1	6	2	..	..	..	1	..	10
	F	..	5	3	..	1	1	..	..	..	..
Wainwright	M	..	1	8	14	9	2	3	..	1	..	38
	F	..	10	18	6	..	3	..	..	1	..	
Wetaskiwin	M	..	1	20	21	5	1	1	..	1	1	51
	F	..	17	20	7	3	1	1	..	1	1	
Whitford	M	..	2	52	22	8	..	1	..	..	1	86
	F	2	68	11	3	..	..	1	..	..	1	
Calgary City	M	..	2	192	317	252	120	45	22	19	6	975
	F	2	127	334	263	138	56	30	11	11	3	
Edmonton City ..	M	..	9	206	307	154	93	43	14	19	3	848
	F	1	177	315	160	100	49	30	7	9	..	
Medicine Hat City..	M	..	2	59	72	40	17	7	5	4	1	207
	F	..	61	81	26	19	11	1	5	3	..	
Lethbridge City ...	M	..	1	59	80	33	12	6	3	2	1	197
	F	..	56	87	37	..	9	2	1	2	..	
Total		19	1265	2711	2259	1170	548	240	103	126	29	4230

MARRIAGES Country of Origin of Contracting Parties.

Bridegrooms																	
English-speaking Countries					Foreign Countries												
					Canada	British	U. S. A.	Total	France	Russia	Scandinavia	Austria	Germany	Italy	Others	Not stated	Total
1301	Canadian Brides married	729	238	240	1207	4	17	26	26	6	1	14	....	....	....	....	94
1061	British Brides married	209	666	156	1031	3	6	10	2	....	....	9	....	....	....	....	30
1109	U.S.A. Brides married	317	154	539	1010	5	19	54	4	9	....	8	....	....	....	....	99
3471	English-speaking countries (Total)	1255	1068	935	3248	12	43	90	32	15	1	31	....	....	....	....	223
18	French Brides married	5	3	....	8	3	....	2	....	....	2	3	....	....	....	....	10
162	Russian Brides married	10	6	19	35	....	109	1	5	6	....	6	....	....	....	....	127
123	Scandinavian Brides married	9	10	31	50	....	6	69	....	1	....	2	....	....	....	....	73
345	Austrian Brides married	6	....	7	13	....	12	....	309	3	1	7	....	....	....	....	332
5	Italian Brides married	....	....	....	....	....	....	....	....	....	4	1	....	....	....	....	5
35	German Brides married	6	3	6	15	....	2	2	1	12	....	3	....	....	....	....	20
64	Others	10	6	5	21	1	2	2	3	2	....	33	....	....	....	....	43
7	Not stated	4	....	2	6	....	....	....	....	....	....	....	....	....	....	1	1
9250	Total	1995	1086	1005	3986	15	168	166	350	59	8	86	1	....	....	....	834

DEATHS DURING THE YEAR 1916, BY AGES AND SEXES.

DISEASES.

DISEASES.												
I.—GENERAL DISEASES.												
	Under 1	1-4	5-14	15-24	25-44	45-59	60-69	70 and over	Not specified	Male	Female	Total
1. Typhoid Fever	1	3	9	20	24	5	1	..	..	40	23	63
2. Smallpox	..	..	..	..	..	..	..	..	..	..	..	..
3. Measles	14	21	10	5	4	..	..	..	..	24	30	54
4. Scarlet Fever	..	2	2	..	..	..	..	..	..	2	2	4
5. Whooping Cough	39	12	2	..	1	..	..	..	..	28	26	54
6. Diphtheria	6	21	14	12	1	..	..	..	..	25	19	44
7. Influenza	37	11	5	5	9	8	9	16	..	52	45	97
8. Dysentery	12	5	1	..	..	..	1	2	..	14	7	21
9. Erysipelas	4	1	..	1	2	1	2	1	..	6	6	12
10. Other Epidemic Diseases	..	..	..	..	..	..	..	..	..	..	..	..
11. Purulent Infection and Septicemia	2	1	..	6	5	..	2	1	..	12	5	17
12. Tetanus	2	..	..	..	1	..	..	..	..	1	2	3
13. Tuberculosis of the Lungs	11	15	26	68	123	36	10	8	..	148	149	297
14. Acute Military Tuberculosis	..	1	..	2	3	..	..	..	..	3	3	6
15. Tuberculosis Meningitis	3	5	2	2	2	..	..	..	..	9	5	14
16. Abdominal Tuberculosis	1	1	1	2	5	1	1	..	..	8	4	12
17. Pott's Disease	1	1	1	1	2	1	1	..	..	4	2	6
18. Tuberculosis of Other Organs	..	..	1	2	1	1	..	1	..	6	..	6
19. Rickets	1	2	1	..	..	..	..	..	..	2	2	4
20. Syphilis	1	..	..	..	5	..	1	..	..	6	1	7
21. Cancer and other Malignant Tumors of the Buccal Cavity	..	..	..	..	3	4	3	2	..	12	..	12
22. Cancer and other Malignant Tumors of the Stomach, Liver	..	1	..	2	16	33	23	9	..	49	35	84
23. Cancer and other Malignant Tumors of the Peritoneum, Intestines, Rectum	..	..	..	..	..	..	..	..	..	..	..	..
24. Cancer and other Malignant Tumors of the Female Genital Organs	..	..	..	..	4	7	6	1	..	13	5	18
	..	..	..	..	7	10	5	3	..	3	22	25

DEATHS DURING THE YEAR 1916, BY AGES AND SEXES.—(Continued)

DISEASES.	AGE.						SEX.					
	Under 1	1—4	5—14	15—24	25—44	45—59	60—69	70 and over	Not specified	Male	Female	Total
III. DISEASES OF THE CIRCULATORY SYSTEM.												
77. Pericarditis	5	5	9	3	12	27	1	16	..	57	40	97
78. Acute Endocarditis	13	3	3	1	31	32	..	32	..	100	58	158
79. Other Diseases of the Heart .....	..	..	..	..	..	1	4	4	..	3	6	9
80. Angina Pectoris .....	..	..	1	..	4	8	15	7	..	20	15	35
81. Diseases of the Arteries, Atheroma, Aneurism, etc	1	..	..	1	5	1	2	1	..	4	7	11
82. Embolism and Thrombosis .....	..	..	..	..	..	..	1	..	..	1	1	2
83. Diseases of the Veins (Varicose, Hemorrhoids, Phlebitis, etc.)	2	..	..	..	..	..	..	..	..	1	1	2
84. Diseases of the Lymphatic System	1	..	..	..	1	3	..	..	..	4	1	5
85. Hemorrhage, other diseases of the Circulatory System .....	..	..	..	..	..	..	..	..	..	..	..	..
IV.—DISEASES OF THE RESPIRATORY SYSTEM.												
86. Diseases of the Nasal Fossae .....	..	1	..	..	..	..	..	..	..	1	..	1
87. Diseases of the Larynx	1	3	5	..	4	..	..	..	..	4	9	13
88. Diseases of the Thyroid Body .....	..	..	..	..	1	..	..	..	..	1	..	1
89. Acute Bronchitis	32	3	..	1	..	4	7	9	..	26	30	56
91. Bronchopneumonia	65	34	5	1	3	2	2	5	..	71	46	117
92. Pneumonia	100	52	18	26	40	46	23	31	..	192	144	336
93. Pleurisy	1	1	1	..	8	4	2	1	..	11	7	18
94. Pulmonary Congestion, Pulmonary Apoplexy	3	1	..	1	2	4	4	4	..	12	7	19
95. Gangrene of the Lung .....	..	..	..	..	..	..	..	..	..	..	..	..
96. Asthma .....	..	1	..	..	2	4	4	5	..	8	8	16
98. Other Diseases of the Respiratory System (Tuberculosis excepted)	4	1	..	..	5	2	..	..	..	5	7	12
V.—DISEASES OF THE DIGESTIVE SYSTEM.												
99. Diseases of the Mouth and Annum	1	..	..	..	..	..	..	..	..	..	1	1
100. Diseases of the Pharynx	4	5	2	1	2	1	..	..	..	7	8	15

101. Diseases of the Esophagus	1	..	..	..	..	1	..	..	..	..	1	1
102. Ulcer of the Stomach .....	..	..	..	..	..	3	4	..	..	..	1	9
103. Other Diseases of the Stomach (Cancer excepted)	46	8	3	..	..	3	2	2	5	..	35	69
104. Diarrhoea and Enteritis	96	39	5	4	7	4	3	1	..	..	95	159
105. Appendicitis and Typhilitis	2	7	15	11	15	7	1	2	..	..	41	60
109. Hernia, Intestinal Obstruction	7	3	1	2	3	11	5	..	..	..	20	34
110. Other Diseases of the Intestines	8	2	6	1	2	4	4	3	..	..	15	30
111. Acute Yellow Atrophy of the Liver .....	..	..	..	1	1	..	..	..	..	..	2	2
112. Cirrhosis of the Liver .....	..	..	..	..	2	4	3	1	..	..	7	10
114. Biliary Calculi .....	..	..	..	..	..	1	2	..	..	..	2	1
115. Other Diseases of the Liver .....	..	..	..	..	..	4	1	3	1	..	6	12
116. Diseases of the Spleen .....	..	2	1	..	1	..	..	..	..	..	2	1
117. Simple Peritonitis (Non-Puerperal) .....	..	2	..	..	..	..	..	..	..	..	2	1
118. Other Diseases of the Digestive System (Cancer and Tuberculosis excepted)	4	4	1	2	13	4	2	1	..	..	16	31
	..	..	..	..	1	..	2	..	..	..	3	3

VI. NON VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.

119. Acute Nephritis	4	..	5	1	15	6	10	4	..	..	23	22	45
120. Bright's Disease	1	..	3	8	21	23	20	15	1	..	54	38	92
122. Other Diseases of the Kidneys and Annexa	1	..	1	2	1	2	2	..	..	..	3	6	9
123. Calculi of the Urinary Passages .....	..	..	..	..	..	1	..	1	..	..	2	..	2
124. Diseases of the Bladder .....	..	..	..	..	..	..	1	2	..	..	3	..	3
125. Diseases of the Urethra, Urinary Abscess, etc. ....	..	..	..	..	1	..	..	1	..	..	1	..	1
126. Diseases of the Prostate .....	..	..	..	..	..	..	1	7	..	..	8	..	8
127. Non-veneral Diseases of the Male Genital Organs .....	..	..	..	..	..	..	..	..	..	..	..	..	..
128. Uterine Hemorrhage .....	..	..	..	..	..	1	..	..	..	..	1	1	1
130. Other Diseases of the Uterus	1	..	2	2	2	1	..	..	..	..	6	6	6
131. Cysts and Other Tumors of the Ovary .....	..	..	..	1	1	..	..	..	..	..	1	1	1
132. Salpingitis and Other Diseases of the Female Genital Organs .....	..	..	1	1	4	..	..	..	..	..	..	5	5
VII.—THE PUERPERAL STATE.													
134. Accidents of Pregnancy ..	..	..	..	2	3	1	..	..	..	..	..	6	6
135. Puerperal Hemorrhage ..	..	..	..	1	6	1	..	..	..	..	8	8	8
136. Other Accidents of Labor ..	..	..	..	..	3	1	..	..	..	..	4	4	4
137. Puerperal Septicæmia	1	..	..	8	21	1	..	..	..	..	31	31	31
138. Puerperal Albuminuria and Convulsions .....	..	..	..	5	8	1	..	..	..	..	14	14	14

XIII.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.

155. Suicide by Poison	1	2	3	5	3	1	..	..	7	8	15
156. Suicide by Asphyxia .....	..	..	..	..	1	..	..	..	..	1	1
157. Suicide by Hanging .....	..	..	..	5	..	..	..	..	4	1	6
158. Suicide by Drowning	1	1	..	2	..	..	..	..	3	1	4
159. Suicide by Firearms .....	..	..	1	4	3	..	..	2	9	1	10
160. Suicide by Cutting or Piercing Instruments .....	..	..	..	1	2	1	..	..	4	..	4
161. Suicide by Jumping from High Places .....	..	..	1	..	..	..	..	..	..	1	1
162. Suicide by Crushing .....	..	..	..	..	..	..	..	..	..	..	..
163. Other Suicides .....	..	..	1	..	1	..	..	..	..	..	..
164. Poisoning by Food	2	..	1	..	1	..	..	..	2	..	2
165. Other Acute Poisonings	2	5	1	4	2	1	..	..	13	2	15
166. Conflagration	1	2	3	..	1	..	..	..	6	3	8
167. Burns	1	15	9	3	1	2	..	..	19	18	37
168. Absorption of Deleterious Gases	2	1	2	7	1	..	..	..	12	3	15
169. Accidental Drowning .....	..	6	5	4	10	2	..	..	17	19	27
170. Traumatism by Firearms .....	..	1	4	5	1	..	1	..	10	6	16
171. Traumatism by Cutting or Piercing Instruments .....	..	..	..	..	..	..	..	..	1	..	1
172. Traumatism by Fall .....	..	..	2	4	2	2	3	..	13	2	15
173. Traumatism in Mines or Quarries .....	..	2	..	3	10	2	..	..	15	..	15
174. Traumatism by Machines .....	..	1	4	1	2	1	..	..	11	2	13
175. Traumatism by Other Crushing (Vehicles, Railroad, Landslides, etc.) ..	1	3	6	19	5	2	2	..	35	3	38
176. Injuries by Animals	1	5	2	3	..	..	..	..	10	1	11
177. Starvation .....	..	..	..	1	1	..	..	..	2	..	2
178. Excessive Cold .....	..	..	1	4	2	..	1	..	4	1	5
179. Effects of Heat .....	..	..	2	2	..	..	..	..	..	..	..
180. Lightning .....	..	..	1	..	..	..	..	..	4	..	4
181. Electricity (Lightning Excepted) .....	..	..	1	3	2	..	..	..	2	..	2
184. Homicide	2	..	..	1	..	..	..	..	7	1	8
185. Fractures (Cause Not Specified) .....	..	3	1	12	4	1	..	..	20	1	21
186. Other External Causes, Legal Hanging .....	..	..	2	3	2	1	2	..	9	1	10

XIV.—ILL-DEFINED DISEASES.

187. Ill-defined Organic Diseases	1	2	..	1	1	6	1	..	3	9	12
188. Sudden Death .....	..	..	1	1	1	3	..	..	5	1	6
189. Cause of Death Not Specified, or Ill-defined	6	2	3	2	4	6	1	..	16	9	25
Totals	1207	384	253	294	721	487	354	355	3	2302	4638

DEATHS DURING THE YEAR 1916, BY MONTHS.

DISEASES

I.—GENERAL DISEASES.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
1. Typhoid Fever	7	1	14	9	6	6	4	6	3	5	1	1	63
5. Smallpox	2	3	7	9	8	9	11	3	..	1	..	1	54
6. Measles .....	..	..	..	..	..	..	..	2	..	..	..	2	4
7. Scarlet Fever .....	..	..	2	7	5	4	6	3	5	2	4	2	54
8. Whooping Cough	7	7	2	4	5	4	2	3	4	1	2	4	54
9. Diphtheria	9	2	4	5	4	4	2	3	4	1	2	4	97
10. Influenza	33	14	10	14	4	4	3	1	3	1	2	8	97
14. Dysentery .....	..	2	..	1	1	..	3	5	5	4	..	..	21
18. Erysipelas	1	2	3	3	..	..	1	..	1	1	..	..	12
19. Other Epidemic Diseases .....	..	1	..	..	..	..	..	..	..	..	..	..	1
20. Purulent Infection and Septicæmia	1	..	2	3	3	3	..	1	..	2	2	..	17
24. Tetanus .....	..	1	1	..	..	1	..	..	..	..	..	1	3
28. Tuberculosis of the Lungs	31	18	41	30	23	22	30	24	20	13	20	25	297
29. Acute Millary Tuberculosis	1	1	1	1	1	1	1	..	..	..	..	..	6
30. Tuberculosis Meningitis .....	..	1	1	1	2	1	2	4	..	1	1	1	14
31. Abdominal Tuberculosis	1	1	1	1	1	1	1	1	2	2	..	1	12
32. Pott's Disease .....	..	2	1	1	1	..	1	1	1	..	..	..	6
34. Tuberculosis of Other Organs	1	..	1	..	..	1	..	1	1	..	1	..	6
36. Rickets .....	..	..	..	..	..	1	2	..	..	..	1	1	4
37. Syphilis .....	..	..	..	1	2	..	1	..	1	..	1	1	7
39. Cancer and Other Malignant Tumors of the Buccal Cavity .....	..	..	3	..	..	1	1	1	..	4	1	1	12
40. Cancer and Other Malignant Tumors of the Stomach, Liver	3	8	8	7	9	12	3	9	6	10	5	4	84
41. Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum .....	..	3	2	2	..	2	1	1	1	1	3	2	18
42. Cancer and Other Malignant Tumors of the Female Genital Organs	1	1	..	6	1	5	5	1	1	..	4	1	25
43. Cancer and Other Malignant Tumors of the Breast	1	1	..	..	..	2	2	2	1	..	..	..	9
44. Cancer of the Skin .....	..	..	..	1	..	..	..	1	..	..	..	..	2

45. Cancer and Other Malignant Tumors of other Organs and Organs not specified	3	5	5	9	3	7	3	4	4	7	1	56
46. Other Tumors (Tumors of the Female Genital Organs excepted) ..	..	1	1	..	..	..	..	..	..	1	..	3
47. Acute Articular Rheumatism	2	4	2	2	1	1	4	3	2	1	2	24
48. Chronic Rheumatism and Gout	1	1	..	2	1	2	1	..	..	..	2	12
49. Scurvy .....	..	..	..	..	..	..	..	..	..	..	..	..
50. Diabetes .....	..	1	3	1	1	..	3	1	2	1	2	30
51. Exophthalmic Goitre	1	..	1	1	3	..	..	..	..	1	..	9
52. Addison's Disease .....	..	..	..	..	..	..	..	..	..	..	..	..
53. Leucæmia	2	..	1	..	..	..	1	..	..	..	1	5
54. Anaemia, Chlorosis	2	..	1	6	4	2	2	1	2	1	2	24
55. Other General Diseases .....	..	1	1	1	1	..	..	1	..	..	..	3
56. Alcoholism (Acute or Chronic)	3	..	2	1	2	2	2	..	1	1	..	11
57. Chronic Lead Poisoning .....	..	..	..	..	..	..	..	..	..	..	..	..

II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.

60. Encephalitis .....	..	2	..	..	1	2	..	..	1	3	1	10
61. Simple Meningitis	1	5	5	3	3	3	6	6	6	6	7	60
62. Locomotor Ataxia .....	..	..	..	..	1	1	1	..	1	..	..	3
63. Other Diseases of the Spinal Cord .....	..	..	..	..	..	..	1	2	2	1	..	8
64. Cerebral Hemorrhage	9	10	7	4	8	6	9	7	2	5	7	89
65. Softening of the Brain .....	..	..	..	..	..	..	..	..	1	..	..	1
66. Paralysis Without Specified Causes	7	3	4	5	5	4	1	5	3	6	3	49
67. General Paralysis of the Insane .....	..	2	2	1	1	1	1	..	..	1	2	10
68. Other Forms of Mental Alienation	1	..	..	1	..	2	..	..	..	1	..	5
69. Epilepsy	3	2	..	1	2	2	3	2	1	1	4	19
70. Convulsions (Non-Puerperal) .....	..	2	1	1	1	3	3	1	1	..	3	11
71. Convulsions of Infants	15	6	9	9	7	7	1	2	2	6	7	76
72. Neuralgia and Neuritis	1	..	1	..	..	..	..	..	1	..	..	3
73. Neuritis .....	..	1	3	1	1	1	2	..	2	1	2	15
74. Other Diseases of the Nervous System .....	..	1	..	..	..	..	..	..	..	..	..	..
75. Diseases of the Eye and their Annexa	1	..	..	..	..	..	..	..	..	..	..	1
76. Diseases of the Ears .....	..	..	..	..	..	..	..	..	..	..	..	..

III. DISEASES OF THE CIRCULATORY SYSTEM.

77. Pericarditis	1	1	1	..	1	..	..	..	..	..	..	1
78. Acute Endocarditis	8	9	11	7	4	5	9	7	11	6	12	81
79. Other Diseases of the Heart	15	17	11	15	12	13	13	11	6	18	15	158

DEATHS DURING THE YEAR 1916, BY MONTHS.—(Continued)

DISEASES.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
80. Angina Pectoris	1	..	1	3	1	..	..	..	..	2	..	1	9
81. Diseases of the Arteries, Aneurism, etc. ....	..	1	..	5	4	2	4	2	4	1	4	9	35
82. Embolism and Thrombosis	3	3	..	1	..	..	..	..	1	1	1	1	11
83. Diseases of the Veins (Varicose, Hemorrhoids, Phlebitis, etc.) .....	..	..	..	1	..	..	..	..	..	..	..	..	1
84. Diseases of the Lymphatic System .....	..	..	..	..	1	..	..	..	..	..	..	1	2
85. Hemorrhage, other diseases of the Circulatory System .....	..	3	..	..	..	..	..	1	..	..	1	..	5
IV.—DISEASES OF THE RESPIRATORY SYSTEM.													
86. Diseases of the Nasal Fossae .....	..	..	..	..	..	1	..	..	..	..	..	..	1
87. Diseases of the Larynx	2	..	1	1	..	3	..	..	..	2	3	1	13
88. Diseases of the Thyroid Body .....	..	..	..	..	..	..	..	..	..	..	1	..	1
89. Acute Bronchitis	7	14	10	3	2	4	3	..	2	1	2	8	56
91. Bronchopneumonia	16	25	13	15	14	9	2	2	1	5	5	7	117
92. Pneumonia	56	33	52	32	31	17	21	18	13	18	20	25	336
93. Pleurisy	3	2	1	1	2	2	..	3	..	1	2	2	16
94. Pulmonary Congestion, Pulmonary Apoplexy	2	1	2	3	..	1	1	1	2	1	1	1	19
95. Gangrene of the Lung .....	..	..	..	..	..	..	..	..	..	..	..	..	..
96. Asthma	1	1	3	2	..	..	2	1	1	2	1	2	16
98. Other Diseases of the Respiratory System (Tuberculosis excepted) ..	2	3	2	1	..	..	..	2	..	1	1	..	12
V.—DISEASES OF THE DIGESTIVE SYSTEM.													
99. Diseases of the Mouth and Annexa .....	..	..	..	..	..	..	..	1	..	..	..	..	1
100. Diseases of the Pharynx .....	..	1	4	1	3	1	1	..	1	1	1	1	15
101. Diseases of the Esophagus .....	..	..	..	..	..	..	1	..	..	..	..	..	1
102. Ulcer of the Stomach	2	..	..	..	3	..	..	3	..	1	..	..	9
103. Other Diseases of the Stomach (Cancer excepted)	6	..	5	1	1	10	17	7	7	1	6	8	69
104. Diarrhoea and Enteritis	12	6	18	7	5	7	24	22	26	16	7	7	159
108. Appendicitis and Typhlitis	6	4	16	2	3	8	3	8	4	3	6	7	60

109.	Hernia, Intestinal Obstruction ..	1	3	1	5	6	2	3	2	6	3	1	31
110.	Other Diseases of the Intestines	1	3	1	4	5	2	1	..	2	6	2	3
111.	Acute Yellow Atrophy of the Liver	1	1	1	..	..	..	..	..	..	..	..	..
112.	Cirrhosis of the Liver .....	..	..	3	..	4	..	..	1	..	1	1	10
113.	Biliary Calculi	1	1	1	..	..	..	..	..	..	..	..	..
114.	Other Diseases of the Liver .....	..	..	1	2	3	..	..	2	..	1	..	4
115.	Diseases of the Spleen .....	..	..	..	..	..	..	..	..	2	1	..	..
116.	Simple Peritonitis (Non-Puerperal)	3	5	4	5	2	1	1	2	2	3	3	31
117.	Other Diseases of the Digestive System (Cancer and Tuberculosis excepted)	1	3	..	..	..	..	..	2	..	..	..	3

VI.—NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.

119.	Acute Nephritis	9	4	5	4	3	1	1	9	4	1
120.	Bright's Disease	3	6	10	7	8	9	8	9	6	15
121.	Other Diseases of the Kidneys and Appendix	1	1	2	..	..	2	1	..	1	92
122.	Calculi of the Urinary Passages	1	..	..	..	..	..	..	..	..	..
123.	Diseases of the Bladder	..	..	..	..	..	..	1	..	..	..
124.	Diseases of the Urethra	..	..	..	..	..	..	1	..	1	..
125.	Diseases of the Urethra, Urinary Abscess, etc.	..	..	..	..	..	..	1	..	1	..
126.	Diseases of the Prostate	2	2	2	..	1	1	..	..	1	..
127.	Non-venereal Diseases of the Male Genital Organs	..	..	..	..	..	..	..	..	..	..
128.	Uterine Hemorrhage	..	..	..	..	..	..	..	..	..	1
129.	Other Diseases of the Uterus	..	..	2	..	1	1	1	..	1	6
130.	Cysts and Other Tumors of the Ovary	..	..	..	..	..	..	..	1	..	..
131.	Sabacum and Other Diseases of the Female Genital Organs	1	3	..	..	1	1	..	1	..	5

VII.—THE PUERPERAL STATE.

134	Accidents of Pregnancy	2	1	1	6
135	Puerperal Hemorrhage	1	1	1	3
136	Other Accidents of Labor	1	1	1	3
137	Puerperal Septicæmia	1	2	2	5
138	Puerperal Albuminuria and Convulsions	1	4	2	7
139	Puerperal Phlegmasia, Alba Dolens, Ecthyma	2	1	1	4
140	Following Childbirth (Not Otherwise Defined)	5	3	2	10
141	Puerperal Diseases of the Breast	1	2	2	5

161.	Suicide by Jumping from High Places	..	..	..	1	..	..	..	..	..	1	..	..
162.	Suicide by Crushing	..	..	..	..	..	..	..	..	..	..	..	..
163.	Other Suicides	..	..	..	1	1	..	..	..	..	..	..	..
164.	Poisoning by Food	..	..	..	1	..	..	..	..	1	..	..	..
165.	Other Acute Poisonings	1	2	1	4	2	..	2	..	..	1	2	..
166.	Conflagration	2	2	..	..	..	4	1	1	3	1	5	5
167.	Burns	3	3	4	2	4	1	1	3	1	5	5	5
168.	Absorption of Deleterious Gases	..	3	..	..	3	3	2	..	..	1	2	1
169.	Accidental Drowning	1	..	..	2	2	5	5	10	1	..	1	..
170.	Traumatism by Firearms	1	1	1	1	1	1	1	2	4	2	..	2
171.	Traumatism by Cutting or Piercing Instruments	..	..	..	1	..	..	..	..	..	..	..	..
172.	Traumatism by Fall	1	1	2	2	2	..	..	2	3	1	1	1
173.	Traumatism in Mines or Quarries	..	3	1	3	..	1	3	1	..	3	..	..
174.	Traumatism by Machines	..	..	..	..	1	1	1	4	2	1	2	1
175.	Traumatism by Other (Crushing (Vehicles, Railroad, Landslides, etc.)	1	2	3	7	3	5	3	3	2	1	1	7
176.	Injuries by Animals	1	2	..	..	2	1	1	1	1	..	2	..
177.	Starvation	1	1	1	..	..	..	..	..	..	..	..	..
178.	Excessive Cold	2	1	2	..	..	..	..	..	..	..	..	..
179.	Effects of Heat	..	..	..	..	..	..	..	..	..	..	..	..
180.	Lightning	..	..	..	..	..	..	..	..	..	..	..	..
181.	Electricity (Lightning excepted)	..	1	..	..	..	3	..	1	..	..	..	..
184.	Homicide	..	..	..	..	..	..	..	1	..	..	..	..
185.	Fractures (Causes Not Specified)	4	2	1	1	3	1	1	2	..	2	2	2
186.	Other External Causes, Legal Hanging	..	1	1	2	..	..	1	..	1	..	2	1
—ILL-DEFINED DISEASES.													
187.	Ill-defined Organic Diseases	1	..	1	1	..	2	2	..	2	1	1	1
188.	Sudden Death	1	1	2	..	..	..	..	..	..	1	1	..
189.	Cause of Death Not Specified or Ill-defined	2	2	5	1	..	2	1	6	4	..	2	..

XIV.—ILL-DEFINED DISEASES.

[illegible]

Total

DEPARTMENT OF AGRICULTURE

DISEASES.	NATIONALITY.										Total
	Canada	Great Britain	United States	Italy	France	Russia	Scandinavia	Austria	Germany	Others	Unknown
1.—GENERAL DISEASES											
1. Typhoid Fever	27	12	12	6	1	1	1	1	1	1	63
5. Smallpox	14	3	6								54
6. Measles	3	1									4
7. Scarlet Fever	53	1									54
8. Whooping Cough	37	3	1								41
9. Diphtheria	13	10	3		1	1	1	1			21
10. Influenza	18	1				1	1	1			22
14. Dysentery	8	3									11
18. Erysipelas	12	2	1				1	1			17
19. Other Epidemic Diseases	2	1									3
20. Purulent Infection and Septicæmia	154	42	39	2	2	8	15	21	1	9	297
24. Tetanus	4	2									6
28. Tuberculosis of the Lungs	12	2									14
29. Acute Miliary Tuberculosis	5	2	2				1		1		12
30. Tuberculosis Meningitis	3	1	1								6
31. Abdominal Tuberculosis	3	1									4
32. Pott's Disease	3	1	1								5
34. Tuberculosis of Other Organs	3	1	1								5
36. Rickets	3										3
37. Syphilis	3	3	2								8
39. Cancer and Other Malignant Tumors of the Buccal Cavity	3	5	1				1		1		12
40. Cancer and Other Malignant Tumors of the Stomach, Liver	24	22	13		1	6	8	5	3	1	84
41. Cancer and Other Malignant Tumors of the Peritoneum, Intestines, Rectum	8	5	1		1		1	1		1	18

[illegible]

III.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.

60.	Encephalitis	.....
61.	Simple Meningitis	.....
62.	Excremental Meningitis	.....
63.	Other Diseases of the Spinal Cord	.....
64.	Cerebral Hemorrhage	.....
65.	Softening of the Brain	.....
66.	Paralysis without Specified Causes	.....
67.	General Paralysis of the Insane	.....
68.	Other Forms of Mental Alienation	.....
69.	Epilepsy	.....
70.	Convulsions (Non-Puerperal)	.....
71.	Convulsions of Infants	.....
73.	Neuralgia and Neuritis	.....
74.	Other Diseases of the Nervous System	.....
75.	Diseases of the Eye and their Annexa	.....
76.	Diseases of the Ears	.....

DEATHS DURING THE YEAR 1916, BY NATIONALITIES. (Continued)

NATIONALITY.

DISEASES.

III.—DISEASES OF THE CIRCULATORY SYSTEM.

	Canada	Great Britain	United States	Italy	France	Russia	Scandinavia	Austria	Germany	Others	Unknown	Total
77. Pericarditis	2	..	..	..	..	..	..	1	..	..	1	4
78. Acute Endocarditis	42	20	12	1	..	7	5	2	5	1	2	97
79. Other Diseases of the Heart	62	31	24	2	..	6	8	14	3	3	5	158
80. Angina Pectoris	2	3	4	..	..	..	..	..	..	..	..	9
81. Diseases of the Arteries, Atheroma, Aneurism, etc.	11	13	5	1	..	..	2	1	..	1	1	35
82. Embolism and Thrombosis	3	5	2	..	..	..	..	..	..	..	1	11
83. Diseases of the Veins (Varicose, Hemorrhoids, Phlebitis, etc.) ..	..	..	1	..	..	..	..	..	..	..	..	1
84. Diseases of the Lymphatic System	2	..	..	..	..	..	..	..	..	..	..	2
85. Hemorrhage, other diseases of the Circulatory System	2	1	..	..	..	..	..	1	..	1	..	5

IV.—DISEASES OF THE RESPIRATORY SYSTEM.

86. Diseases of the Nasal Fossae	1	..	..	..	..	..	..	..	..	..	..	1
87. Diseases of the Larynx	10	1	1	..	..	..	..	1	..	..	..	13
88. Diseases of the Thyroid Body	1	..	..	..	..	..	..	..	..	..	..	1
89. Acute Bronchitis	44	6	2	..	..	1	..	2	1	..	..	56
91. Bronchopneumonia	109	3	3	..	..	..	1	..	..	..	1	117
92. Pneumonia	221	48	32	1	10	6	9	2	2	5	336	5
93. Pleurisy	10	4	2	..	..	1	..	..	..	1	1	18
94. Pulmonary Congestion, Pulmonary Apoplexy	13	1	2	..	..	2	1	..	..	..	..	19
95. Gangrene of the Lung	..	..	..	..	..	..	..	..	..	..	..	..
96. Asthma	7	3	4	..	..	..	1	..	1	..	..	16
98. Other Diseases of the Respiratory System (Tuberculosis excepted)	8	2	1	..	..	..	..	1	..	..	..	12

V.—DISEASES OF THE DIGESTIVE SYSTEM.

99. Diseases of the Mouth and Annexa	1	..	..	..	..	..	..	..	..	1
100. Diseases of the Pharynx	11	2	1	..	..	..	..	..	..	15
101. Diseases of the Esophagus .....	..	1	..	..	..	..	..	..	..	1
102. Ulcer of the Stomach	2	3	5	..	..	..	..	..	..	9
103. Other diseases of the Stomach (Cancer excepted) ..	62	2	2	..	1	1	..	..	..	69
104. Diarrhoea and Enteritis	143	3	6	1	3	1	1	..	1	159
108. Appendicitis and Typhilitis	37	1	10	..	2	..	2	..	1	60
109. Hernia, Intestinal Obstruction	17	8	4	..	..	1	1	2	..	34
110. Other Diseases of the Intestines	18	3	4	..	..	2	1	..	..	30
111. Acute Yellow Atrophy of the Liver	1	..	1	..	..	..	..	..	..	2
113. Cirrhosis of the Liver	2	4	3	..	1	..	..	..	..	10
114. Biliary Calculi	1	1	..	..	..	1	..	..	..	3
115. Other Diseases of the Liver	6	2	1	..	..	2	1	..	..	12
116. Diseases of the Spleen	2	..	1	..	..	..	..	..	..	3
117. Simple Peritonitis (Non-Puerperal)	11	7	1	1	..	3	1	..	1	31
118. Other Diseases of the Digestive System (Cancer and Tuberculosis excepted) ..	2	1	..	..	..	..	..	..	..	3

VI.—NON-VENTEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.

119. Acute Nephritis	21	7	..	..	1	1	..	..	..	45
120. Bright's Disease	28	8	18	..	2	3	5	2	1	92
122. Other Diseases of the Kidneys and Annexa	2	1	2	..	..	..	..	1	..	9
123. Calculi of the Urinary Passages .....	..	2	..	..	..	..	..	..	..	2
124. Diseases of the Bladder	2	1	..	..	..	..	..	..	..	3
125. Diseases of the Urethra, Urinary Abscess, etc. ....	..	..	..	..	..	1	..	..	..	1
126. Diseases of the Prostate	1	1	..	..	..	1	..	..	..	8
127. Non-venereal Diseases of the Male Genital Organs ..	..	..	1	..	..	..	..	..	..	1
128. Uterine Hemorrhage .....	..	3	1	..	..	..	..	..	..	6
130. Other Diseases of the Uterus	2	3	..	..	..	1	..	1	..	1
131. Cysts and Other Tumors of the Ovary .....	..	1	..	..	..	..	..	..	..	1
132. Salpingitis and other Diseases of the Female Genital Organs ..	..	..	1	..	..	..	1	..	..	5

VII.—THE PUERPERAL STATE.

134. Accidents of Pregnancy	2	1	..	..	1	..	..	..	..	3
135. Puerperal Hemorrhage	2	2	..	1	1	..	..	..	..	8
136. Other Accidents of Labor	3	1	..	..	..	1	..	..	..	4

DEATHS DURING THE YEAR 1916, BY NATIONALITIES.—(Continued)

DISEASES.	NATIONALITY.										Total
	Canada	Great Britain	United States	Italy	France	Russia	Scandinavia	Austria	Germany	Others	Unknown
137. Puerperal Septicemia	12	10	5	..	..	..	1	3	..	..	31
138. Puerperal Albuminuria and Convulsions	5	5	3	..	..	..	..	1	..	..	14
139. Puerperal Phlegmasia, Alba Dolens, Embolus, Sudden Death	3	2	1	..	..	1	..	1	..	..	8
140. Following Childbirth (Not Otherwise Defined)	11	1	2	..	..	1	4	4	..	1	25
141. Puerperal Diseases of the Breast .....	..	..	..	..	..	..	..	..	..	..	..
VIII.—DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.											
142. Gangrene .....	..	1	..	..	..	..	..	..	..	..	1
144. Acute Abscess	2	1	..	..	..	..	..	..	..	..	3
145. Other Diseases of the Skin and Annexa	7	..	..	..	..	..	..	..	..	..	7
IX.—DISEASES OF THE BONES AND OF THE ORGANS OF LOCOMOTION.											
146. Diseases of the Bones (Tuberculosis excepted) ..	3	2	..	..	..	..	..	1	..	..	6
148. Amputations	1	1	..	..	..	..	..	..	..	..	2
149. Other Diseases of the Organs of Locomotion	1	2	..	..	..	..	..	..	..	..	3
X.—MALFORMATIONS.											
150. Congenital Malformations (Stillbirths not included)	56	..	..	..	..	..	..	..	..	..	57
XI.—DISEASES OF EARLY INFANCY.											
151. Congenital Debility, Isterus, Sclerema, Premature Birth	40	1	..	..	..	..	..	..	..	..	41
152. Other Diseases Peculiar to Early Infancy	101	..	..	..	..	..	..	..	..	..	101
153. Lack of Care .....	..	..	..	..	..	..	..	..	..	..	..
XII.—OLD AGE.											
154. Senility	33	25	7	..	1	2	7	13	2	..	92

XIII.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.

155. Suicide by Poison	3	4	3	..	..	1	..	1	..	1	2	..	1	15
156. Suicide by Asphyxia .....	..	..	..	..	..	..	..	..	..	..	1	..	..	1
157. Suicide by Hanging	1	..	..	..	..	2	..	..	..	1	1	..	..	5
158. Suicide by Drowning	3	1	..	..	..	..	..	..	..	..	..	..	..	3
159. Suicide by Firearms	4	1	2	..	..	..	..	..	..	2	..	..	1	10
160. Suicide by Cutting and Piercing Instruments	3	1	..	..	..	..	..	..	..	..	..	..	..	4
161. Suicide by Jumping from High Places	3	1	..	..	..	..	..	..	..	..	..	..	..	1
162. Suicide by Crushing .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..
163. Other Suicides	1	..	1	..	..	..	..	..	..	..	..	..	..	2
164. Poisoning by Food	2	..	..	..	..	..	..	..	..	..	..	..	..	2
165. Other Acute Poisonings	9	2	1	..	1	..	..	..	..	1	..	..	1	15
166. Conflagration	7	..	..	..	..	..	..	..	..	..	..	..	1	8
167. Burns	23	3	5	1	..	..	..	..	..	1	4	..	..	37
168. Absorption of Deleterious Gases	7	2	..	1	..	..	..	..	..	2	1	..	2	15
169. Accidental Drowning	17	1	3	..	..	..	..	..	..	1	1	..	4	27
170. Traumatism by Firearms	5	3	4	..	..	..	..	..	..	1	2	1	..	16
171. Traumatism by Cutting or Piercing Instruments	1	..	..	..	..	..	..	..	..	..	..	..	..	1
172. Traumatism by Fall	7	3	..	..	..	1	..	..	..	2	2	..	..	15
173. Traumatism in Mines or Quarries	1	4	1	3	..	..	..	..	..	5	1	..	..	15
174. Traumatism by Machines	1	5	5	..	..	1	..	..	..	..	..	..	1	13
175. Traumatism by Other (Crushing (Vehicles, Railroads, Landslides, etc.)	12	6	7	..	1	1	..	..	..	1	9	1	..	33
176. Injuries by Animals	5	2	4	..	..	..	..	..	..	..	..	..	..	11
177. Starvation	1	..	..	..	..	..	..	..	..	1	..	..	..	2
178. Excessive Cold	1	3	..	..	..	..	..	..	2	..	..	..	..	5
179. Effects of Heat .....	..	..	..	..	..	..	..	..	..	..	..	..	..	3
180. Lightning .....	..	1	2	..	..	..	..	..	1	..	..	..	..	2
181. Electricity (Lightning Excepted)	2	2	..	..	..	..	..	..	..	..	..	..	..	8
184. Homicide	2	..	3	1	..	..	..	..	..	2	..	..	..	1
185. Fractures (Causes Not Specified)	7	4	3	..	..	1	1	1	1	1	1	..	..	21
186. Other External Causes, Legal Hanging	2	5	1	..	..	..	..	..	..	1	..	..	1	10

XIV.—ILL-DEFINED DISEASES.

187. Ill-defined Organic Diseases	4	1	..	..	1	1	1	..	..	1	4	..	..	12
188. Sudden Death	3	2	..	..	..	..	..	..	..	..	..	..	1	6
189. Cause of Death Not Specified or Ill-defined	15	1	1	..	..	1	..	..	..	7	..	1	7	27
Totals	2512	561	330	11	39	83	133	177	41	46	32	468	..	..

POPULATION AND BIRTH AND DEATH RATE.

Population (Dominion Census, 1916)	496,117
Birth Rate per 1000 Births	26.87
Death Rate per 1000 Deaths	8.18

RATIO OF MALE TO FEMALE BIRTHS AND OF BIRTHS TO DEATHS.

Year	Births of Males to 1,000 Births of Females	Ratio of Births to Deaths	Year	Births of Males to 1,000 Births of Females	Ratio of Births to Deaths
1901	1,081	3.55	1909	1,086	2.59
1902	1,010	2.59	1910	1,065	2.69
1903	1,056	2.95	1911	1,103	2.43
1904	1,118	3.04	1912	1,084	2.43
1905	1,059	3.11	1913	1,053	2.67
1906	1,094	2.07	1914	1,081	3.30
1907	1,075	2.96	1915	1,100	3.47
1908	1,077	2.73	1916	1,063	3.29

DEATHS OF INFANTS UNDER ONE YEAR, DURING 1916.

To 1000 Births	90.5
To 1000 Deaths from all causes	297.5
Stillbirths	307

Respectfully submitted,

T. J. NORMAN, M. D.

Deputy Registrar General.

ALBERTA NATURAL HISTORY SOCIETY

REPORT FOR THE YEAR ENDING NOVEMBER 30TH, 1916.

The Eleventh Annual Meeting of the Alberta Natural History Society was held on Wednesday, 29th November, 1916, in the Library of the City Hall, Red Deer.

REPORT OF INNISFAIL BRANCH.

Mr. Wm. Geary reported that the financial assets of his branch amounted to \$28.00 (Twenty-eight Dollars), and that the value of the library books equalled \$25.00 (Twenty-five Dollars), as nearly as could be estimated.

REPORT OF ERSKINE BRANCH.

Mrs. S. S. Judd stated that the members of this branch numbered thirty-one. Seven regular and two special meetings had been held during the current year. Three book prizes had been awarded to children at the Stettler Fair on July 1st, but no field day had been held on account of adverse weather conditions.

A picnic-dinner took place at the school house, and short Nature discussions were delivered. The library contains twenty-four books.

Financial statement:

Balance in hand Dec. 10th, 1915	\$44.20	
Receipts for current year	22.50	
		\$66.70
Expenditure for current year	\$38.04	
Balance in hand Nov. 29th, 1916	28.66	
		\$66.70

REPORT OF SECRETARY-TREASURER.

Mr. C. B. Horsbrugh reported as follows:

During the year five ordinary meetings and one special meeting were held.

Prizes were donated for Natural History subjects at the Red Deer Fair in July, and were awarded to:

Miss Millie Meeres, Collection of Alberta Wild Flowers, \$3.00.

Miss Millie Meeres, Composition on Bird Life, \$1.00.

Miss Lilian Gudmundson, Collection of Alberta Insects, \$2.25.

A grant of \$2.00 was given for the same purpose to the Water Glen School.

The annual grant of \$10.00 was made to the Erskine Branch, with an additional increase of \$5.00 to mark appreciation of considerable progress, and which may be maintained in future years should the work accomplished warrant this expenditure.

The annual grant of \$40.00 was donated to the Red Deer Library Board for purchase of Natural History books and magazines.

An addition of fourteen members to the list of 1915 now swells the total membership to twenty-six.

The Red Deer branch of The Alberta Natural History Society having ceased to exist as an independent one, its funds, amounting to \$71.50 have been added to the funds of the parent society.

Through the generosity of Mr. F. C. Whitehouse of Red Deer, and Messrs. K. Bowman and D. Mackie of Edmonton, two show cases for insects have been filled with an interesting and valuable collection of Alberta Moths and Butterflies, representing a number of families, and hung in the Public Library at Red Deer. These exhibition cases and their contents are the property of the Society, expenses for which have been met from its funds.

The following Officers were elected for the ensuing year:

Hon. President, Hon. Duncan Marshall.
 1st Vice-President, Mr. H. A. Craig.
 2nd Vice-President, Mr. E. Michener, M. P. P.
 President, Mr. F. C. Whitehouse.
 1st Vice-President, Mrs. W. A. Cassels.
 2nd Vice-President, Dr. H. George.

Directors:—Mrs. Cottingham.
 Mrs. George.
 Mrs. Pamely.
 Miss Fyson.
 Miss Cole.
 Mr. R. E. Fiske.
 Mr. E. Wilton.

FINANCIAL STATEMENT NOV. 1915 TO NOV. 1916.

RECEIPTS

Balance in hand	\$105.94
Red Deer Branch	71.50
Government Grant	100.00
Subscriptions	7.25
	<hr/>
	\$284.69

EXPENDITURES

Expenses of Delegates	\$ 16.25
News Publishing Co.	8.75
Prizes, Red Deer Fair	6.25
Prizes, Water Glen School	2.00
Secretary's Salary	15.00
Grant to R. D. Library Bd.	40.00
Grant to Erskine Branch	15.00
Insect Exhibition Cases	9.95
Postages	1.55
Balance in hand	169.94
	<hr/>
	\$284.69

ADDRESS BY THE PRESIDENT, DR. GEORGE.

(Being the Executive Report for 1916.)

In past years in our Society it has been the custom on the occasion of the Annual Meeting for the Presidential address to be made at the business session in the afternoon, and owing to press of time it has usually been brief.

Properly speaking, the Presidential address is the Executive Report—the epitome of the year's work—and this year it was decided to give it premier place in the evening proceedings.

Early this year it was considered advisable to appoint committees to prepare check lists of certain groups for this district. The committees were as follows:

Birds:—Mrs. Cassels, The President, Dr. George, and Mr. C. B. Horsbrugh.

Plants:—Mrs. George, Miss Cole and Mr. H. H. Gaetz.

Dragonflies:—Mr. F. C. Whitehouse.

Good progress has been made on the bird list, and by next Annual Meeting it should be complete. During the year Mr. Horsbrugh has continued his observations on bird-life and habits, and will give the results this evening.

The preparation of a botanical list is necessarily a protracted work, possibly of some years, as great care must be exercised to avoid errors. As a preliminary step Professor F. J. Lewis of the University of Alberta, Edmonton, has been consulted, and he has kindly assented to give his assistance in every way possible. The loss of the capable botanist, Mr. H. H. Gaetz, on this Committee will be deeply felt and it can only be hoped that his appointment to the Chair of Pharmacy at the University of Alberta will give his scientific attainments a still wider scope.

The third list, that of the dragon-flies of the Red Deer district, dealing as it does with a comparatively small order, has been completed, and Mr. Whitehouse will this evening give this meeting the result of his observations and exhibit specimens of all the dragon-flies enumerated.

In the West one of the obstacles to Natural History study has been the lack of literature. That this should not be the case in the Red Deer District our Society has, for the last three years, made grants of forty dollars to the Red Deer Public Library, specifying only that the selection of the books purchased shall be at our discretion. The result of these grants is that there is growing, available to all, a Natural History Library of very real value. The works range from strictly scientific text-books and popular text-books, suitable for adult students, to juvenile Natural History stories.

With regard to field work, the fact that papers on three entirely different groups are to be given this evening is indicative of our activities. Apart from such evidence, however, it should be mentioned that valuable work in entomology is being carried out by other members of our Society over a wider field than the immediate vicinity of Red Deer—in fact as far distant as Nordegg, Edmonton and Pocatontas in Jasper Park.

Next year it will be the aim of the Executive to place on record at the Annual Meeting particulars of the collecting referred to, that is, a specific list of the rarer and more interesting captures.

It is to be regretted that school children, under the guidance of their teachers, do not take a greater interest in Natural History study, and compete in larger numbers for the prizes offered annually by our society. A love of nature is instinctive in most children, but sympathetic encouragement is necessary for its proper development.

At the September meeting Mr. Whitehouse offered to present to the society for permanent exhibition in the Public Library at Red Deer, a case each of moths and butterflies, if the society would provide suitable cases. The offer was gladly accepted and the cases are now duly installed.

The insects are in scientific order, and correctly named, and it is hoped that the specimens will not only enable students to readily identify insects collected, but also serve to show how such insects should be mounted. In order to make the exhibits as representative as possible, Mr. Whitehouse called upon our Edmonton members, Messrs. Bowman and Mackie, for a number of specimens, and to them our thanks are due.

This report could not be more fittingly concluded than by expressing the very sincere appreciation of our society for the assistance accorded by the Honourable Duncan Marshall, Minister of Agriculture, in publishing the transactions of our society, and special papers, in the annual report of his department, as Appendix F, and in authorizing that copies shall be sent to all our members.

It would be beyond the finances of our society otherwise to publish the records of its work, and however interesting and useful these might be, the result would be lost.

For the third year I beg to submit an entomological report to the Alberta Natural History Society for the Red Deer district:

INSECT PESTS.

M. dissidia (The Forest Tent Caterpillar).—This pest proved less troublesome in the City of Red Deer than during 1914 and 1915, due to the egg masses, that were deposited on the trees in 1915, being destroyed by an egg parasite this spring. I examined a considerable number of egg masses in April, and found the parasites at work. The facts were duly reported to the Dominion Entomologist at Ottawa. In the country, however, particularly around Sylvan Lake, this pest entirely denuded the trees of leaves. After the white poplars were stripped they attacked balm, birch, etc., and besides spoiling the landscape, became an insufferable nuisance, as they swarmed everywhere.

Mrs. W. A. Cassels observed wrens removing the caterpillars from the vicinity of their nests, and also that the caterpillars would succumb if exposed to hot sunshine for too long a time when seeking a place to pupate.

Mr. Horsbrugh noted beetles attacking the caterpillars on the ground beneath the trees. Some of the beetles were taken and mounted, and later at the request of the Department of Entomology, were forwarded to Ottawa.

They proved to be *Calasoma tepidum* and *Upis ceramboides*, and surprise was expressed that the latter should be found attacking caterpillars, though it is "in the ordinary course of nature" with the former. The matter is one of both economic and scientific interest, and further investigation next year is highly desirable.

Galerucella decora (The Willow Leaf Beetle).—In my report of last year I commented on the disfiguration of the landscape in this district effected by the willow leaf beetle, and I was prepared for a recurrence this year. True, in early spring I found a number of adult beetles on the willows in Gaetz Park, but the brood then apparently died out. In mid-June, however, Calgary papers reported that the foliage of trees in that city was being destroyed by a beetle, which from descriptions published, was undoubtedly the insect under discussion.

Cutworms.—No reports have come to my knowledge of the cutworm group being particularly troublesome during 1916 in this district, though the red-backed cutworm, *Euxoa ochrogaster*, always effects more or less damage in gardens.

The Cabbage Root Maggot.—This pest causes a considerable amount of annoyance and not a little damage every year to cabbages, garden turnips, cauliflowers, etc., and horticulturists should welcome Bulletin No. 12, recently published by the Department of Agriculture, Ottawa, Entomological Branch, dealing specially with the subject.

One of the means of control recommended appears very simple, and may well be mentioned here, viz., a disk of tar paper, not to be wrapped around the stem of the plant, as is sometimes done to ward off the attack of cutworms, but to lie flat on the ground, fitting snugly around the stalk. The eggs are laid by the fly on the stalk above the ground, and after hatching the grub must quickly get into the soil. The tar paper prevents this and the grubs die.

Grain Aphidae.—Happily, the Grain Aphid, that appeared in such numbers on oats in September, 1915, and was mentioned in my report of last year, caused no trouble this. Whether it was exterminated by natural enemies, lady-bird beetles, etc., or was out of its range and could not survive the exceptionally cold winter I cannot say. It can prove a dangerous pest, and its appearance was most unwelcome. It is to be hoped that we have seen the last of it.

Lepidoptera.—It has not been my practice to report long lists of captures of butterflies and moths, as the Alberta list is in capable hands and is being elsewhere recorded, but only such captures that deserve special recognition as new records of rarities.

Among these I might mention a new Alberta record taken by myself, 28th June, a large Hawk moth, *Sphinx drupiferarum*, and 10th August at Nordegg, a pair of the rare *Neoarctia beanii* (Bean's tiger moth). At Red Deer, 24th June, I took the large black swallowtail butterfly *Papilio bairdi*—a rare insect.

Another member of the society, Mr. K. Bowman, of Edmonton, had an exceptionally good day collecting butterflies, 18th July at Nordegg. He captured no less than twenty-four different varieties, including such rarities as *Brenthis astarte*, *Papilio nitra* and *Papilio zolicaon*. The last two mentioned were rarely taken a number of years ago at Blackfalds and elsewhere, but to the best of my knowledge, neither has been observed for a long time. Mr. Bowman's captures therefore amount to the re-discovery of these rare and beautiful insects—at least in this district.

Under a resolution of the society passed shortly after the last general meeting, I undertook to prepare a check list of the dragon-flies of this district. I shall this evening have pleasure in submitting this list, with brief memoranda concerning a number of the different varieties, and other information that I think would be of value to anyone desiring to devote some leisure hours to the study of this interesting order of insects.

Yours respectfully,

F. C. WHITEHOUSE.

*APPENDIX TO THE REPORT OF
THE LIVE STOCK COMMISSIONER*

HORSES				CATTLE								
Shipping Point	Inspector	Local	Export	Total	Male	Female	Calves	Yr'lings	Mature	Local	Export	Total
Acheson.....	James Couch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anne.....	J. N. Brown	339	292	631	1,269	798	694	23	1,350	1,981	86	2,067
Archie.....	Leslie Farr	33	29	62	215	76	8	.....	283	291	.....	291
Alderson.....	Geo. M. Thompson	5	.....	5	.....	20	.....	.....	20	20	.....	20
Aldersyde.....	Wm. B. Way	.....	.....	.....	15	15	1	11	18	30	.....	30
Alliance.....	C. A. Hogan	.....	.....	.....	95	24	2	.....	117	119	.....	119
Alix.....	H. A. Finch	93	163	196	468	165	23	46	564	596	37	633
Amisk.....	Philip W. Harrison	1	.....	1	381	49	19	.....	411	151	279	430
Arley.....	Thos. J. Hampton	.....	.....	.....	71	9	.....	.....	80	10	70	80
Ardrrossan.....	A. McFermid	.....	.....	.....	8	6	2	3	9	14	.....	14
Arnprior.....	J. B. Erickson	.....	.....	.....	101	26	3	.....	124	127	.....	127
Athabasca.....	Wm. R. Day	71	26	97	116	128	4	31	209	244	.....	244
Barons.....	G. B. Moir	1	.....	1	1	1	1	.....	1	2	.....	2
Bashaw.....	J. C. Windsor	65	31	96	711	327	83	.....	955	743	295	1,038
Bassano.....	Walter J. Brogan	.....	12	12	.....	.....	.....	.....	.....	.....	.....	.....
Bawlf.....	K. O. Egan	11	.....	11	416	206	43	.....	579	622	.....	622
Belseker.....	F. A. Lount	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Big Valley.....	Bert. Uttley	.....	8	8	258	73	.....	.....	331	94	237	331
Bittern Lake.....	O. H. Toreson	1	.....	1	404	118	111	8	403	460	62	522
Blackfalds.....	Jos. Capron	2	.....	2	116	21	.....	.....	137	137	.....	137
Blackie.....	Fred Rockafellow	20	18	38	118	86	.....	.....	204	178	26	204
Bon Accord.....	H. A. Whittaker	9	.....	9	163	58	22	10	189	221	.....	221
Botha.....	D. O. Kierbow	33	4	37	484	126	50	2	558	269	341	610
Bowden.....	Robt. McCue	13	.....	13	463	266	111	47	571	729	.....	729
Bowell.....	Jos. Delinks	2	2	4	.....	.....	.....	.....	.....	.....	.....	.....
Bow Island.....	Geo. Bruce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boyle.....	W. A. Boyle	.....	.....	.....	.....	2	.....	.....	2	2	.....	2
Brant.....	Wm. Thomas	.....	.....	.....	28	16	.....	.....	44	44	.....	44
Brenner.....	F. E. Latham	22	.....	22	208	70	13	1	264	278	.....	278
Brockton.....	Roy McLaughlin	.....	.....	.....	.....	1	.....	.....	1	1	.....	1
Brooks.....	Norman Stafford	71	.....	71	1,992	690	969	.....	1,713	1,498	1,184	2,682
Bruce.....	G. E. Cummins	.....	.....	.....	434	150	.....	.....	584	56	528	584
Bruderheim.....	W. T. Egging	.....	.....	.....	202	86	20	.....	268	218	70	288
Burdett.....	Geo. Lomas	6	.....	6	12	14	4	.....	22	26	.....	26

Adogian.....	24	13	37	45	3	8798	2,364	.....	48	48	.....	5,312	.....	23,101
J. McCartney	2,017	283	3,000	14,303	.....	2,015	357	.....	20,557	17,789	.....	1,028	.....	5,937
P. D. Sanders	488	916	704	3,892	.....	49	1	.....	5,497	4,909	.....	50	.....	50
M. Saxsmith	136	106	242	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
H. C. McMullen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
W. G. Duggan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Camrose	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cardiff	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lorne McLaughlin	107	349	456	796	350	64	.....	.....	1,082	551	.....	595	.....	1,146
R. A. Pilling	9	.....	9	172	10	7	.....	.....	175	182	.....	.....	.....	182
J. Stuart Ainslie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
W. W. Brown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
John Gibson	615	720	1,335	2,813	642	91	.....	.....	3,354	2,211	.....	1,244	.....	3,455
Robt. C. Howat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. E. Jetties	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
L. Beeton	.....	40	40	1,156	1,104	18	.....	.....	2,242	510	.....	1,750	.....	2,260
J. S. Reynolds	3	.....	3	62	1	.....	.....	.....	63	.....	.....	63	.....	63
W. A. Carmichael	291	28	229	156	36	4	.....	.....	188	185	.....	7	.....	192
A. E. Keith	.....	37	37	65	7	.....	.....	.....	72	72	.....	.....	.....	72
John McLean	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arthur Burnett	.....	.....	.....	20	21	41	.....	.....	.....	7	.....	34	.....	41
W. R. Hawkshaw	118	14	132	171	20	191	.....	.....	189	141	.....	50	.....	191
Edwin Auld	6	.....	6	1,258	821	65	.....	.....	2,013	2,079	.....	.....	.....	2,079
Andrew Watson	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
J. E. Moffatt	164	122	286	584	291	9	.....	.....	866	587	.....	288	.....	875
Guy Wilson	2	.....	2	692	202	109	.....	.....	777	841	.....	50	.....	894
Duncan Clark	4	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
G. M. Mortimer	95	106	201	37	50	10	.....	.....	77	87	.....	.....	.....	87
Joseph Plante	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harrison Wiltsie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. A. Towns	11	19	30	98	32	4	.....	.....	126	105	.....	25	.....	130
Eric Gilson	.....	7	7	364	56	.....	.....	.....	420	290	.....	130	.....	420
R. N. McNab	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Joe Young	13	17	30	450	153	3	.....	.....	578	391	.....	212	.....	603
A. C. Thompson	34	.....	34	351	74	.....	.....	.....	125	425	.....	.....	.....	425
Wm. Urquhart	166	83	249	559	343	76	.....	.....	817	799	.....	103	.....	902
Chas. Houcher	16	16	32	205	40	7	.....	.....	294	18	.....	245	.....	245
John P. Laughey	.....	.....	.....	21	11	.....	.....	.....	32	32	.....	.....	.....	32
Wm. Bateman	4	.....	4	118	17	.....	.....	.....	135	135	.....	.....	.....	135
D. Davidson	19	171	190	114	98	45	167	134	78	212
A. E. Kent	70	18	88	1,297	175	37	398	422	20	442

LITTLE

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Ship and Port	Inspector	HORSES			CATTLE						Total	
		Local	Export	Total	Male	Female	Calves	Yearlings	Mature	Local		Export
Loughheed.....	R. Jesson.....	.....	.....	.....	250	141	36	.....	355	243	148	391
Lousana.....	L. S. McKenzie.....	11	.....	11	126	26	.....	.....	152	152	.....	152
Macleod.....	A. Scheer.....	86	543	629	709	332	2	.....	1,039	502	539	1,041
Magrath.....	Benj. Mathins.....	.....	.....	.....	882	120	.....	.....	1,002	155	847	1,002
Mannville.....	Geo. S. Shortreed.....	.....	.....	.....	377	124	2	.....	499	437	64	501
Manyberries.....	John W. Smiley.....	.....	5	5	.....	.....	.....	.....	.....	.....	.....	.....
Medicine Hat.....	J. H. G. Bray.....	417	491	908	84	106	16	1	173	143	47	190
Meeting Creek.....	Jos. Philpott.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Metiskow.....	L. P. Larson.....	3	8	11	123	17	1	.....	139	17	123	140
Metiskow.....	Andrew Stuart.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milk River.....	W. J. Quinn.....	60	.....	60	289	1,680	458	.....	1,511	1,969	.....	1,969
Millet.....	Thos. B. Smith.....	60	.....	60	467	266	88	150	495	709	24	733
Minburn.....	E. Huffman.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mirror.....	Albert Ray.....	4	.....	4	.....	1	.....	.....	1	1	.....	1
Monitor.....	Roy Cranmer.....	27	.....	27	98	19	5	.....	112	117	.....	117
Moningside.....	Wm. H. Johnson.....	5	.....	5	18	15	.....	.....	33	33	.....	33
Mooserville.....	P. S. Cardoche.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris.....	Frank L. Wadman.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morrin.....	E. F. Barth.....	40	.....	40	88	2	.....	.....	90	90	.....	90
Morrin.....	Val Mohr.....	21	29	50	1,187	487	16	.....	1,058	1,674	.....	1,674
Munton.....	W. C. King.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Namaka.....	E. C. Watts.....	.....	.....	.....	18	14	.....	.....	32	32	.....	32
Nanton.....	Wm. Robertson.....	385	6	391	2,524	979	69	.....	2,252	1,378	1,943	3,321
Nateby.....	Hugh H. Forster.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ned.....	A. H. Fox.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Dayton.....	Wm. Luscombe.....	.....	.....	.....	40	25	.....	.....	65	65	.....	65
New Norway.....	Nels P. Nystrom.....	.....	12	12	124	77	1	.....	200	18	183	201
Nordbygg.....	L. Erickson.....	.....	.....	.....	4	5	5	.....	4	9	.....	9
Onaton.....	A. W. Flemming.....	26	3	29	411	200	27	11	573	604	7	611
Okotoks.....	Geo. C. S. Patterson.....	41	.....	41	8	2	.....	.....	9	10	.....	10
Olds.....	Thos. McKeeler.....	369	291	660	7,053	1,303	189	126	8,041	5,805	2,551	8,356
Onoway.....	T. J. Meeklam.....	2	2	189	77	11	8	247	266	266
Oyen.....	Roy Clemens.....	41	56	97	36	3	39	30	9	39
Parland.....	A. E. Jones.....	6	6	15	15	9	22	31	31

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HORSES

HORSES				CATTLE								
Shipping Point	Inspector	Local	Export	Total	Male	Female	Calves	Yrflngs	Mature	Local	Export	Total
Swallowell.....	Fred W. Currie.....	70	59	129	152	42	3	6	185	143	51	194
Sylvan Lake.....	W. C. Petro.....	.....	.....	.....	240	93	44	26	263	333	.....	333
Taber.....	J. B. Jett.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tawatina.....	H. Sparkes.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Three Hills.....	C. P. McDonough.....	15	.....	15	13	4	.....	.....	17	17	.....	17
Tofield.....	A. S. Smith.....	12	55	67	482	173	89	.....	566	449	206	655
Trochu.....	Harry Durrant.....	202	4	206	626	320	104	.....	842	946	.....	946
Uncas.....	Alex. McDermid.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vegreville.....	A. A. Harkness.....	16	55	71	2,009	711	33	13	2,674	2,169	551	2,720
Vermilion.....	H. Woods.....	32	8	40	291	83	1	1	372	312	62	374
Vermilion.....	W. B. Nellis.....	3	8	11	86	52	.....	.....	128	138	.....	138
Veteran.....	H. L. Bidleman.....	2	.....	2	145	26	4	.....	167	171	.....	171
Viking.....	P. N. Kjosness.....	8	.....	8	296	42	.....	.....	338	276	62	338
Wabamun.....	S. White.....	1	.....	1	352	325	42	18	617	677	.....	677
Wainwright.....	J. W. Brown.....	24	43	77	476	92	3	.....	565	270	298	568
Wainwright.....	S. D. Mills.....	163	.....	163	553	225	43	2	733	638	140	778
Walsh.....	J. W. Roberts.....	4	250	254	461	77	3	.....	535	118	420	538
Warner.....	G. W. Morton.....	2	23	25	136	15	1	.....	150	142	9	151
Wetaskiwin.....	Dr. Johnson.....	172	244	416	1,150	632	115	202	1,456	1,401	381	1,782
Woolford.....	Alonzo Lamb.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wrentham.....	C. B. Perkins.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Youngstown.....	Ernest Avery.....	75	.....	75	5	9	.....	.....	14	14	.....	14
Youngstown.....	G. Parsons.....	50	.....	50	3	6	.....	.....	9	9	.....	9
		12,101	10,734	22,835	95,442	46,475	10,208	3,423	128,286	108,349	37,568	141,917

*APPENDIX TO THE REPORT OF THE
SUPERINTENDENT OF FAIRS AND INSTITUTES*

LIST OF EXHIBITION ASSOCIATIONS. SECRETARY AND MANAGER.

Calgary	June 29 to July 5	E. L. Richardson
Edmonton	July 10 to July 15	W. J. Stark
Athabasca	Sept. 15-16	J. E. Lucas

LIST OF AGRICULTURAL SOCIETIES AND SECRETARIES FOR 1916.
WITH DATES.

SOCIETY	DATE	SECRETARY	ADDRESS
Alix	July 12 ..	W. L. Pettet	Alix
Bashaw	No Fair	J. A. Marshall	Bashaw
Big Bend	No Fair	W. A. Holmes	Loverna
Berry Creek	Sept. 8	L. E. Helmer	Nateby
Bowden	Oct. 4	M. G. Christie	Bowden
Camrose	Aug. 18-19	J. D. Saunders	Camrose
Carbon	No Fair	T. J. Bishop	Carbon
Cardston	Sept. 1-2	J. Elmer Harris	Cardston
Carmangay	Aug. 8-9	A. E. Quayle	Carmangay
Castor	Sept. 18-19	L. B. Browne	Castor
Chauvin	Aug. 1	H. Foreman	Chauvin
Chinook	Aug. 9.	Lorne Proudfoot	Chinook
Claresholm	July 27-28	J. R. Watt	Claresholm
Cochrane	Sept. 5-6	A. Chapman	Cochrane
Colinton	Sept. 1	N. O. Jack	Colinton
Consort	Aug. 16-17	W. Fraser	Consort
Coronation	Aug. 14-15	T. N. Cuthbert	Coronation
Crossfield	June 21-22	E. S. McRory	Crossfield
Daysland	Aug. 9-10	A. A. P. McDowell	Daysland
Deseret	Sept. 5-6	Benj. Matkin	Magrath
Didsbury	Sept. 7-8	Parker Reed	Didsbury
Donalda	No Fair	B. A. Butzer	Donalda
Edgerton	Aug. 18	W. H. Hallett	Edgerton
Edson	Sept. 5	F. U. Laycock	Edson
Elk Point	Sept. 5	Charles Hood	Elk Point
Empress	No Fair	M. A. Blodgett	Empress
Entwistle	Sept. 6	H. E. Smith	Entwistle
Ft. Saskatchewan	Sept. 6-7	G. T. Montgomery	Ft. Saskatchewan
Gadsby	Sept. 20	N. A. Kelly	Gadsby
Gleichen	Aug. 15-16	P. Maclean	Gleichen
Grande Prairie	July 4-5	David H. Axon	Grande Prairie
Granum	Aug. 2-3	James Blair	Granum
Grassy Lake	Sept. 27-28	W. C. McCrostie	Grassy Lake
Griffin Creek	Sept. 26-27	E. A. Bell	Griffin Creek
Hanna	Aug. 10-11	W. C. Stirling	Hanna
Hardisty	Aug. 11	A. J. McArthur	Hardisty
Hays	Sept. 26	Wm. Angus	Lousana
Highland	Aug. 15	J. P. McBeath	Delia
High Prairie	Sept. 29-30	G. E. Martin	High Prairie
High River	July 20-21	A. J. W. Thompson	High River
Holden	Sept. 8	N. L. Campbell	Holden
Innisfail	Sept. 13-14	W. G. McArthur	Innisfail
Innisfree	Sept. 20-21	L. M. Trace	Innisfree
Irma	Aug. 2	F. W. Watkinson	Irma
Kitscoty	Sept. 8	G. W. Parsons	Kitscoty
Legal	No Fair	Arthur Carriere	Diligence
Lacombe	Aug. 15-16 17	A. J. Cameron	Lacombe
Langdon & Bow R.	Aug. 16	Walter Allcock	Langdon
Leduc	Sept. 19	A. R. Ennis	Leduc
Lloydminster	Sept. 12-13	H. Huxley	Lloydminster
Macleod	Aug. 10-11	T. A. Powell	Macleod
Mannville	Sept. 19	C. B. Woods	Mannville
Medicine Hat	No Fair	C. Prince	Medicine Hat
Mid-Pembina	Sept. 12	Chas. Welch	Dunstable
Milnerton	Sept. 22	Jas. McKenzie	Wimborne

SOCIETY	DATE	SECRETARY	ADDRESS
Munson	Aug. 16	L. C. Jackson	Munson
Nakamun	Sept. 8	J. A. Hinchcliffe	Nakamun
Nanton	July 25-26	Wm. Robertson	Nanton
Okotoks	July 18-19	E. A. Hayes	Okotoks
Olds	Sept. 20-21	W. Bliss	Olds
Onoway	Sept. 7	Jas. Priestly	Onoway
Oyen	Aug. 7-8	J. H. Alexander	Oyen
Paddle River	Sept. 13	Mrs. H. D. Burch	Glenreagh
Peace R. Crossing	Aug. 9-10-11	D. J. Johnston	Peace River Cross.
Pincher Creek	Sept. 22-23	J. W. Harwood	Pincher Creek
Ponoka	Sept. 12-13	T. W. Hutchinson	Ponoka
Priddis & Millarville	Oct. 3	H. D. Wheeler	Priddis
Provost	Aug. 10	Kenneth Watson	Provost
Raymond	Aug. 29-30-31	S. F. Kimball	Raymond
Rawdonville	July 27-28	F. B. White	Swalwell
Red Deer	July 6-8	G. H. Lindsay	Red Deer
Rocky Mtn. House	Sept. 11-12	G. T. Thompson	Rocky Mt. House
Saskatoon Lake & Beaver Lodge	Sept. 11-12-13	H. Cooper	Lake Saskatoon
Sedgewick	Aug. 8	E. D. LeRiche	Sedgewick
St. Albert	Sept. 4-5	H. Denoyers	Morinville
Stavely	Aug. 1	J. F. Rea	Stavely
Stettler	Sept. 15-16	Geo. T. Day	Stettler
Stony Plain	Aug. 15	Wm. Robertson	Stony Plain
Strome-Killam	Aug. 4	A. H. Bowler	Sedgewick
St. Paul	Sept. 6	Ed. Rousseau	St. Paul
Spirit River	Sept. 19-20	R. C. Watson	Spirit River
Suffield	Oct. 18-19	Colin Dewhurst	Suffield
Taber	Sept. 25-26	E. T. Westlake	Taber
Three Hills	July 25	H. S. Simpson	Three Hills
Tofield	Sept. 7	J. W. Francis	Tofield
Trochu	Sept. 27-28	R. H. Slipp	Trochu
Vegreville	Aug. 16-17	Chas. Fulton	Vegreville
Vermilion	Sept. 14-15	Job Mace	Vermilion
Viking & Birch L.	Sept. 6	J. C. Barker	Viking
Vulcan	Aug. 3-4	R. W. Glover	Vulcan
Wainwright	Sept. 12-13	David Hanson	Wainwright
Warner	No Fair	A. P. Veale	Warner
Waterhole	Sept. 22-23	W. H. McAuley	Waterhole
Westlock	Sept. 14	A. R. Brown	Westlock
Wetaskiwin	Aug. 22-23	R. N. Shaw	Wetaskiwin
Wheatsheaf	Aug. 18	J. C. Watling	Bideford
Winnifred	Aug. 14	R. A. Parker	Winnifred
Youngstown	Aug. 17-18	C. A. Nelson	Youngstown

LIST OF JUDGES, 1916.

Rawlinson, Tom	Crossfield, Lacombe, Edson, Entwistle, Onoway, Nakamun, Wainwright, Bowden.
Lowes, W. F.	Crossfield, Red Deer, Okotoks, Trochu, Hays, Innisfree, Chauvin, Irma, Provost, Strome-Killam, Sedgewick, Hardisty, Mid-Pembina, Paddle River, Westlock, Holden, Coronation, Consort, Wheatsheaf, Colinton, Three Hills, Swalwell, High River, Athabasca, Viking, Tofield, Daysland, Calgary.
McNally, J. H.	Crossfield, Mid-Pembina, Paddle River, Westlock, Athabasca, Okotoks, High River, Nanton, Claresholm, Coronation, Consort.
Cargill, D.	Calgary.

Dinsmore, Wayne	....	Calgary.
Burnett, Dr.	.....	Calgary.
Tolmie, Dr.	.....	Calgary.
Meyer, A. E.	.....	Calgary, Red Deer, Carmangay, Macleod, Milnerton, Hays, Trochu, Stettler, Castor, Gadsby, Viking, To-field, Holden, Wainwright, Edgerton.
Standish, W. H.	.....	Calgary, Red Deer, Edmonton.
Galbraith, A. G.	.....	Red Deer, Oyen, Chinook, Hanna, Highland, Munson, Nanton, Claresholm.
Richardson, F.	.....	Edmonton.
Stericker, R. P.	.....	Edmonton, Okotoks, High River, Nanton, Claresholm, Stavely, Granum, Vulcan, Carmangay, Macleod, Gleichen, Langdon.
Robinson, Harry	.....	Edmonton.
Gray, Chas.	.....	Edmonton.
Chadwick, J. C.	.....	Alix, Oyen, Chinook, Hanna, Highland, Munson, Cochrane, Didsbury, Lloydminster, Vermilion.
Hutton, G., Sr.	.....	Alix, Leduc, St. Albert, Ft. Saskatchewan, Mannville, Innisfree, Bowden, Kitscoty.
Clements, Jas.	.....	Stavely, Granum, Vulcan, Rocky Mtn. House, Ponoka, Milnerton, Trochu, Stettler, Castor, Gadsby, Sedgewick, Daysland, Lacombe, Priddis and Millarville, Edgerton, Suffield, Provost, Irvine.
Stephen, W. H.	.....	Stavely, Grassy Lake, Winnifred.
McGregor, K.	.....	Gleichen, Langdon, Wetaskiwin.
Yule, C.	.....	Berry Creek, Olds.
Colquhoun, A.	.....	Cochrane, Didsbury, Olds, Ponoka, Rocky Mtn. House, Innisfail, Priddis and Millarville, Milnerton.
Wilson, John	.....	Cochrane, Didsbury, Stony Plain, Innisfail, Vegreville, Camrose. (Storm-stayed on way to Grande Prairie.)
Baxter, J.	.....	Innisfail, St. Paul des Metis, Elk Point.
Scott, George W.	.....	Innisfail.
Scott, H. W.	.....	Deseret, Pincher Creek, Taber.
McKercher, A.	.....	Leduc, Edson, Entwistle, Onoway, Nakamun, Rocky Mtn. House, Ponoka.
McKercher, D.	.....	Griffin Creek, Waterhole, Peace River Crossing, Lake Saskatoon and Beaver Lodge.
Galbraith, A. R.	.....	Raymond, Cardston, Stony Plain, Vegreville, Camrose, Deseret, Wetaskiwin. Lloydminster, Vermilion, Mannville, Pincher Creek, Taber, Grassy Lake, Edmonton.
Miller, J.	.....	Three Hills, Swalwell, Chauvin, Irma, Strome-Killam.
McIntyre, A. W.	.....	Raymond, Cardston, Lloydminster, Vermilion.
McCaig, James	.....	Stony Plain, Camrose, Wetaskiwin, Ft. Saskatchewan, Lloydminster, Vermilion, Lacombe.
Alcock, J. B.	.....	St. Albert, Ft. Saskatchewan, Colinton.
Douglas, J.	.....	Kitscoty.
Hutcheson, L.	.....	Griffin Creek, Waterhole, Lake Saskatoon and Beaver Lodge.
Graham, Robt.	.....	Edmonton.
McKirdy, Wm.	.....	Edmonton.
Gardhouse, John	.....	Edmonton.
Smith, H. B.	.....	Edmonton.
Leckie, Robt.	.....	Calgary.
Drennan, R. E.	.....	Calgary.
Stark, W. J.	.....	Calgary.
McDonald, Dr. W. T.	Calgary.

FINANCIAL STATEMENT OF AGRICULTURAL SOCIETIES.

ANNUAL REPORT, 1916

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No. of	SOCIETY	Govt. Grant Paid 1916	Total Receipts	Total Expenditure	Balance on hand	Overdraft	Assets	Liabilities	Date of Exhibition	No. of entries
1	Cardston	\$ 528.83	\$ 4,073.75	\$ 4,073.75	.....	.....	\$ 6,379.20	\$ 3,200.00	Sept. 1-2	1,003
2	Magrath	1,225.83	3,338.18	3,526.75	31.43	.....	5,531.43	3,900.00	Sept. 29-30	623
3	Didsbury	764.16	3,381.80	3,375.57	6.23	.....	6.23	443.75	Sept. 7-8	648
4	Timislay	1,844.82	5,721.57	5,507.13	214.44	.....	7,075.02	4,125.50	Sept. 13-14	1,307
5	Lacombe	1,443.83	7,614.45	7,592.04	22.41	.....	13,905.30	6,006.20	Aug. 15-16-17	594
6	Red Deer	3,133.83	15,859.89	15,626.71	233.18	.....	3,767.18	3,122.00	July 6-7-8	1,375
7	Macleod	.....	2,656.69	2,552.50	104.10	.....	2,219.76	4,396.98	Aug. 10-11-12	641
8	Medicine Hat	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Olds	699.00	3,489.11	3,397.24	91.87	.....	4,444.47	2,894.00	Sept. 21	620
10	Pincher Creek	343.66	1,380.16	1,323.84	56.32	.....	910.09	355.00	Sept. 22-23	330
11	Ponoka	1,426.81	3,494.77	3,429.23	65.54	.....	1,165.54	1,250.00	Sept. 12-13	662
12	Raymond	1,490.18	4,595.69	4,495.69	.....	.....	4,260.87	1,701.20	Aug. 29-30-31	1,210
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	Okotoks	793.00	2,222.04	2,179.18	42.86	.....	2,042.86	900.00	July 18	405
15	Vespaerville	1,491.83	4,399.63	4,388.90	10.73	.....	192.73	1,548.44	Aug. 16-17	1,362
16	Wetaskiwin	1,989.80	4,412.71	4,362.94	49.77	.....	3,211.71	2,120.00	Aug. 22-23	1,025
17	Leduc	2,249.10	6,208.60	6,132.48	76.12	.....	2,705.77	2,269.00	Sept. 12	1,292
18	Narmon	141.00	1,262.40	923.90	338.50	.....	338.50	.....	July 25-26	344
19	Vermillion	1,801.99	5,266.76	5,067.51	199.25	.....	3,832.71	1,102.50	Sept. 14-15	1,608
20	High River	926.06	3,068.63	2,885.63	183.00	.....	1,683.00	308.00	July 20-21	730
21	Fridley and Millarville	394.00	2,004.64	1,956.85	47.79	.....	150.29	700.00	Oct. 14	832
22	Viking	845.83	2,423.92	2,254.86	169.06	.....	1,117.22	861.00	Sept. 6	797
23	St. Albert	1,061.83	5,351.18	5,347.60	3.58	.....	3,593.22	2,495.15	Sept. 4-5	929
24	Mannville	1,251.00	4,796.58	4,644.44	152.14	.....	2,025.64	1,850.00	Sept. 19	965
25	Stettler	846.83	3,688.13	3,556.20	132.93	.....	3,122.97	2,708.06	Sept. 15-16	949
26	Daysland	867.66	2,200.01	2,199.59	.42	.....	1,508.34	1,428.25	Aug. 9-10	895
27	Clareholm	698.70	3,292.73	3,282.23	10.50	47.00	10.50	967.00	July 27-28	458
28	Almonte	963.66	2,862.65	2,779.54	83.11	.....	2,522.43	1,960.00	Sept. 22	752
29	Irvine	1,682.33	5,025.23	5,025.23	.....	.....	2,083.74	1,980.40	Sept. 25-26	1,381
30	Taber	.....	.....	.....	.....	.....	2,106.59	2,175.00	Sept. 20-21	948
31	Irnisfree	1,815.33	5,482.75	5,403.82	78.93	.....	3,039.68	2,091.80	Aug. 8	640
32	Sedgewick	1,072.66	4,351.60	4,351.60	.02	.....	.....	.....	.....	.....

FINANCIAL STATEMENT OF AGRICULTURAL SOCIETIES. (Continued).

No.	SOCIETY	Govt. Grant Paid 1916	Total Receipts	Total Expenditure	Balance on hand	Overdraft	Assets	Liabilities	Date of Exhibition	No. of en- tries
33	Alix	\$ 329.50	\$ 1,347.75	\$ 1,335.90	\$ 11.85	.....	\$ 297.80	\$ 617.30	July 12	248
34	Lloydminster	3,278.66	10,159.76	10,901.95	67.81	.....	67.81	2,934.00	Sept. 12-13	1,399
35	Camrose	1,894.06	6,306.72	6,281.85	24.87	.....	2,050.03	2,000.00	Aug. 18-19	1,270
36	Gleichen	515.83	1,582.94	1,581.29	1.65	.....	8,470.31	2,975.00	Aug. 19-20	385
37	Three Hills	765.66	2,007.84	1,964.60	43.24	.....	843.24	800.00	July 23	558
38	Irma	727.17	2,473.06	2,317.91	155.15	.....	1,155.15	1,200.00	Aug. 2	937
39	Crossfield	1,323.88	5,278.71	5,135.22	143.49	.....	4,143.59	3,250.00	June 23-24	1,003
40	Airdrie .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Bowden	629.00	1,591.88	1,591.88	.....	21.28	.....	551.28	Oct. 4	513
42	Wabamun .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Fallis and Rexboro	486.60	995.57	869.51	126.06	.....	243.46	184.85	Sept. 8	288
44	Holten	599.66	1,748.07	1,747.65	.42	.....	110.42	706.00	Sept. 8	609
45	Cochrane	1,215.86	3,092.26	3,092.26	.....	3.88	1,414.16	1,254.88	Sept. 5-6	536
46	Stavely	880.00	2,751.80	2,735.75	16.05	696.00	4,487.81	1,444.00	Aug. 1	672
47	Tofield	729.76	2,119.43	2,119.43	.....	10.42	2,200.00	2,174.22	Sept. 7	1,013
48	Strome-Killam	594.16	2,651.92	2,565.89	86.03	.....	1,566.09	1,000.00	Aug. 4	773
49	Trochu	700.66	2,625.30	2,625.30	.....	23.84	1,269.15	1,188.84	Sept. 27	1,131
50	Fort Saskatchewan	1,952.13	2,632.70	2,632.70	.....	221.11	66.00	221.11	Sept. 6-7	1,102
51	Grannin	961.80	2,707.05	2,697.83	9.22	.....	159.22	100.00	Aug. 2-3	951
52	Langdon	783.00	1,832.35	1,831.40	.95	.....	941.47	710.00	Aug. 16	544
53	Grande Prairie	1,071.33	6,107.75	6,107.75	.....	568.87	5,192.59	1,137.74	July 5-6	286
54	Calcar .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
55	Kilsnoy	850.66	2,420.83	2,301.09	119.74	.....	1,038.51	903.20	Sept. 8	.....
56	Stony Plain	1,442.20	5,106.74	5,048.92	57.82	.....	1,291.35	2,083.81	Aug. 15	1,177
57	High Prairie	277.50	749.12	352.81	396.31	.....	941.31	.....	.....	.....
58	Swadwell	728.66	2,461.90	2,445.05	16.85	.....	3,448.60	930.00	July 26-27	800
59	Entwistle	652.50	2,015.52	1,988.36	27.16	.....	815.49	730.00	Sept. 6	942
60	Carmanagay	679.16	.....	.....	.....	.....	.....	.....	.....	.....
61	Provost	722.82	2,307.31	2,277.78	29.53	1,342.03	1,089.15	Aug. 10	723
62
63
64	Mid-Pembina	366.16	815.65	799.64	16.01	431.04	291.29	Sept. 12	461

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FINANCIAL STATEMENT OF AGRICULTURAL SOCIETIES—(Continued).

No	SOCIETY	Govt. Grant Paid 1916	Total Receipts	Total Expenditure	Balance on hand	Overdraft	Assets	Liabilities	Date of Exhibition	No. of en- tries
103	Rumsey .....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	.....	.....
104	Bashaw .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
105	Vulcan	258.33	2,547.11	2,384.55	162.56	.....	3,432.37	2,691.60	Aug. 3-4	286
106	Berry Creek	371.33	1,482.89	1,463.80	19.09	.....	875.49	400.00	Sept. 8	575
107	Waterhole	365.33	1,852.88	1,783.55	69.33	.....	5,030.98	671.16	Sept. 22-23	692
108	Oyen	261.20	1,316.40	1,316.40	.....	128.63	525.00	493.23	Aug. 7-8	388
109	Donalda .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
110	Flaxland .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
111	Peace River Crossing .....	.....	1,718.40	1,717.25	1.15	.....	832.75	400.00	Aug. 9-10-11	433
112	Suffield .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
113	Etzikom .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
114	Retlaw; 115—Busby; 116—Boucher, and 117—Sibbald, new societies.	.....	.....	.....	.....	.....	.....	.....	.....	.....
200	Edmonton Exhibition	8,000.00	104,833.58	102,758.49	2,075.09	.....	15,056.71	.....	July 10-15	4,786
202	Calgary Exhibition	5,000.00	83,973.83	73,071.48	10,902.35	.....	21,010.98	1,427.36	June 29-July 5	5,695
203	Lethbridge Exhibition .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
204	Athabasca Exhibition	976.30	3,150.67	3,150.67	.....	.....	1,621.33	1,148.27	Sept. 15-16	767

EXHIBITION STATEMENT.

No	SOCIETY	Amt. Paid in Prizes at Exhibition	Amt. Paid in Prizes for Sports	Amt. Paid in Prizes for Field Grain Competition	Amt. Paid in Prizes for Seed Fair	Amt. Paid in Prizes for Stallion Show	Amt. Paid in Prizes for Poultry Show	Amt. Paid in Prizes for Good Farms Competition	Govt. Grant to be Paid in 1917
1	Cardston	\$ 1,844.00	\$ 410.00	\$	\$	\$	\$	\$	\$ 1,369.33
2	Magrath	1,042.25	64.25		106.00		291.75		1,167.58
3	Didbury	825.30							700.20
4	Innisfail	2,305.00			85.00				1,750.65
5	Lacombe	1,551.50	315.00	75.00	94.00				1,328.33
6	Red Deer	5,258.55	2,500.00				324.50		3,150.00
7	Macleod	1,699.50	209.00	265.00					1,413.65
8	Medicine Hat								
9	Olds	709.30	103.00		117.00				693.86
10	Pincher Creek	369.50							316.33
11	Ponoka	1,620.38	240.00						1,195.18
12	Raymond	2,213.55	182.50						1,601.70
13									
14	Okotoks	812.50		36.00	37.00		90.50		843.16
15	Vegreville	1,800.90		285.00	102.00				1,619.60
16	Wetaskiwin	2,410.00	455.50						1,726.66
17	Leslie	2,713.45	204.00	225.00	80.00				2,169.30
18	Nanton	491.50	132.00						520.66
19	Vermilion	2,314.44	175.00	225.00	128.50				1,942.96
20	High River	1,040.00	231.00						843.33
21	Fridley & Millarville	907.00	75.50		42.00				727.66
22	Viking	1,133.75			106.00				955.16
23	St. Albert	1,843.50		170.00					1,341.66
24	Mannville	1,844.30		225.00					1,524.53
25	Stettler	1,020.50		90.00					897.00
26	Daysland	990.25	316.75	150.00	74.00				964.16
27	Clareholm	819.90	432.00						696.60
28	Millerton	1,120.00			71.00				913.66
29	Irvine								
30	Taber	2,174.90	50.00	225.00	25.00		286.50		1,998.43

EXHIBITION STATEMENT. (Continued).

No	SOCIETY	Amt. Paid in Prizes at Exhibition	Amt. Paid in Prizes for Sports	Amt. Paid in Prizes for Field Grain Competition	Amt. Paid in Prizes for Seed Fair	Amt. Paid in Prizes for Stallion Show	Amt. Paid in Prizes for Poultry Show	Amt. Paid in Prizes for Good Farms Competition	Govt. Grant to be Paid in 1917
31	Innisfree	\$ 2,537.50	\$	\$	\$ 71.00	\$	\$	\$	\$ 1,913.66
32	Sedgewick	1,598.50	190.00	75.00	110.00	.....	.....	.....	1,315.66
33	Alix	311.95	.....	.....	.....	.....	.....	.....	285.96
34	Lloydminster	5,141.10	.....	.....	78.00	.....	.....	.....	3,228.00
35	Camrose	2,737.25	400.00	75.00	.....	.....	.....	.....	2,024.83
36	Gleichen	579.25	.....	.....	84.00	.....	.....	.....	386.66
37	Three Hills	688.00	.....	150.00	.....	.....	.....	.....	.....
38	Irma	939.75	.....	225.00	58.00	.....	37.00	.....	975.50
39	Crossfield	1,827.97	527.90	.....	.....	.....	.....	.....	1,348.64
40	Airdrie	708.50	.....	.....	96.00	.....	.....	.....	636.33
41	Bowden .....	.....	.....	.....	.....	.....	.....	.....	.....
42	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Wabamun .....	.....	.....	.....	.....	.....	.....	.....	.....
44	Fallis and Rexboro	624.55	.....	.....	.....	.....	.....	.....	420.33
45	Holden	977.35	.....	.....	.....	.....	.....	.....	771.56
46	Cochrane	1,255.75	.....	.....	177.00	.....	118.00	.....	1,139.17
47	Stavelly	1,150.15	340.00	.....	.....	.....	.....	.....	916.76
48	Tofield	1,108.40	.....	.....	23.00	.....	.....	.....	963.93
49	Strome-Killam	931.60	29.00	.....	91.00	.....	.....	.....	712.06
50	Trochu	1,482.00	.....	.....	.....	.....	.....	.....	1,125.00
51	Fort Saskatchewan	1,650.25	160.00	.....	.....	.....	.....	.....	1,242.10
52	Graum	1,406.50	509.40	.....	.....	.....	.....	.....	1,087.66
53	Langedon	858.80	.....	.....	36.00	.....	.....	.....	690.53
54	Grande Prairie	826.00	1,056.00	.....	.....	.....	.....	.....	700.66
55	Castor .....	.....	.....	.....	.....	.....	.....	.....	.....
56	Kitscoy	1,234.70	.....	.....	.....	.....	.....	.....	963.13
57	Stony Plain	1,537.15	63.75	385.00	55.00	.....	.....	105.00	1,550.26
58	High Prairie	56.00
59	Swalwell	1,124.65	884.76
60	Entwistle	934.00	71.00	745.66

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EXHIBITION STATEMENT. (Continued).

No.	SOCIETY	Amt. Paid in Prizes at Exhibition	Amt. Paid in Prizes for Sports	Amt. Paid in Prizes for Field Grain Competition	Amt. Paid in Prizes for Seed Fair	Amt. Paid in Prizes for Stallion Show	Amt. Paid in Prizes for Poultry Show	Amt. Paid in Prizes for Good Farms Competition	Govt. Grant to be Paid in 1917
		\$	\$	\$	\$	\$	\$	\$	\$
99	Wheatsharf	.....	.....	.....	.....	.....	.....	.....	.....
100	Highland	556.75	.....	.....	.....	.....	.....	.....	507.23
101	Empress	.....	.....	150.00	.....	.....	.....	.....	100.00
102	Hanna	393.25	259.60	105.00	.....	.....	.....	.....	332.16
103	Runsey	.....	.....	.....	.....	.....	.....	.....	.....
104	Bashaw	.....	.....	.....	.....	.....	.....	.....	.....
105	Vulcan	583.75	221.00	.....	.....	.....	.....	.....	.....
106	Berry Creek	339.75	100.00	150.00	.....	.....	.....	.....	539.16
107	Waterhole	609.75	141.05	195.00	.....	.....	.....	.....	476.50
108	Oyen	679.25	255.00	.....	68.50	.....	.....	.....	643.50
109	Donalda	.....	.....	.....	.....	.....	.....	.....	598.33
110	Flaxland	.....	.....	.....	.....	.....	.....	.....	.....
111	Peace River Crossing	412.25	454.00	.....	.....	.....	.....	.....	424.83
112	Suffield	.....	.....	.....	.....	.....	.....	.....	.....
113	Etzikom	.....	.....	.....	.....	.....	.....	.....	.....
200	Edmonton Exhibition	15,181.00	8,393.75	.....	.....	.....	.....	.....	13,000.00
202	Calgary Exhibition	18,045.05	10,800.00	.....	.....	.....	.....	.....	13,000.00
203	Leithbridge Exhibition	.....	.....	.....	.....	.....	.....	.....	.....
204	Athabasca Exhibition	1,082.00	143.10	.....	.....	.....	.....	.....	716.33

HORTICULTURAL ASSOCIATIONS

No.	SOCIETY	Grant Paid For 1916	Receipts	Expendit.	Balance on hand	Overdraft	Assets	Liabilities	Date of Exhibition	No. of En- tries
766	Edmonton	\$ 300.00	\$ 882.65	\$ 886.11	.....	3.46	\$ 557.23	\$ 557.23	Aug. 18-19	952
767	Calgary	300.00	1,930.29	1,445.68	484.61	.....	484.61	.....	Aug. 16-18	841
768	Red Deer	295.00	601.20	601.20	.....	.....	250.00	250.00	Aug. 24	439
769	St. Albert	194.85	461.85	461.85	.....	.....	.....	200.00	Aug. 23	556
770	Magrath	80.10	150.55	80.10	50.45	.....	50.45	.....	Sept. 6	126
771	Taber	199.20	311.08	267.00	44.08	.....	44.08	.....	.....	209
772	Camrose	.....	.....	.....	.....	.....	.....	.....	.....	...
773	Calgary Vacant Lots Garden Club	355.50	2,815.22	2,815.22	.....	.....	130.00	200.00	Oct. 17-19	635

POULTRY AND PET STOCK ASSOCIATIONS

No.	SOCIETY	Grant Paid For 1916	Receipts	Expendit.	Balance on hand	Overdraft	Assets	Liabilities	Date of Exhibition	No. of En- tries
793	Edmonton	\$ 587.83	\$2 853.40	\$2 853.40	\$.....	\$.....	\$1,086.57	\$ 980.23	Dec. 5-8	1,319
794	Calgary	711.86	2,647.35	1,608.40	1,038.95	422.71	.....	422.71	Dec. 12-15	1,344
795	Lethbridge	1,031.33	3 133.81	2,927.66	206.15	.....	1,646.48	750.00	Dec. 18-22	1,166
796	Pincher Creek	221.50	547.53	320.05	27.48	.....	27.48	150.00	Jan. 4-5 1917	244
797	Nanton	.....	.....	.....	.....	.....	.....	.....	.....	..
798	Camrose	.....	.....	.....	.....	.....	.....	.....	.....	..
799	Clareholm	.....	.....	.....	.....	.....	.....	.....	.....	..
799-1	Medicine Hat	420.33	2,526.53	2,526.53	.....	.....	940.20	984.50	Dec. 26-30	1,329
799-2	Fort Saskatchewan	.....	.....	.....	.....	.....	.....	.....	.....	..
799-3	Wetaskiwin	300.00	533.04	533.04	.....	.....	143.90	342.54	Nov. 28-30	310

*APPENDIX TO THE REPORT OF THE
PROVINCIAL MEDICAL HEALTH OFFICER
AND DEPUTY REGISTRAR-GENERAL*

DEPARTMENT OF AGRICULTURE

SCARLET FEVER.

(Within Municipalities.)

POST OFFICE	SEX		MONTHS												AGES						Total		
	M.	F.																					
			January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44	45-59		60-69	70-over
Calgary	7	7	..	2	2	2	2	2	3	4	1	3	7	3
Edmonton	19	18	4	5	6	..	2	11	2	..	2	1	3	..	10	19	8
Lethbridge	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..
Medicine Hat	1	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Hanna	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Innisfall	3	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Lamont	3	6	..	..	..	..	..	..	..	..	..	..	4	5	..	..	1	8	1	..	..	..
Macleod .....	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..
R. M. Steamtown	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..
Total	38	33	3	2	8	7	8	1	6	11	2	2	9	12	1	19	38	13	..	..	..	71

SCARLET FEVER.

(Outside Municipalities.)

POST OFFICE	SEX	MONTHS												AGES					Total			
		January	February	March	April	May	June	July	August	September	October	November	December	0 1	1 4	5 14	15 24	25-44		45 59	60 69	70-over
Beaver River	M.	1										1					1					1
Gleichen	F.																					
Ham-fall	M.	1															1					1
Marshall	F.																2	1				3
Medicine Hat	M.	1															7	5	1			13
Olds	F.																	1				1
Rocky Mountain	M.	1																				1
Vegreville	F.																					
Vermilion	M.	1															1	1				2
Victoria	F.																					
Wainwright	M.	5															4	6				10
Whitford	F.																					
		6															1	4	6			11
Total		27	21	1	3	10	2	6	2	2	8	1	1	14	1	19	23	4	1			48

DEPARTMENT OF AGRICULTURE

Within Municipalities.

POST OFFICE	SEX	MONTHS												AGES					Total		
		January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44		45-59	60-69	70-over
Calgary	29	2	1	4	1	4	3	10	5	6	1	1	1	1	1	7	25	3	..	..	37
Edmonton	8	..	..	..	..	1	2	10	..	..	1	..	..	1	3	1	7	2	..	..	14
Lethbridge	74	2	24	66	12	3	7	1	3	4	1	..	..	..	14	34	7	55	13	..	123
Medicine Hat	9	..	..	10	3	..	..	..	..	..	..	..	..	1	1	1	5	6	..	..	13
Carmangay	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2
Coalhurst	7	1	1	7	..	..	..	..	..	..	..	..	..	..	..	2	5	1	..	..	8
Coleman	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	1
Commerce	8	..	1	8	..	..	..	..	1	2	..	..	..	..	1	2	1	8	..	..	12
Coronation	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1	..	..	1
Diamond City	5	..	..	2	1	..	..	..	1	..	..	..	..	..	..	2	1	2	..	..	5
Ft. Saskatchewan	1	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	1	1	..	..	1
High River	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Innisfail	4	..	..	..	..	..	..	6	..	..	..	..	..	..	..	3	1	1	1	..	6
Macleod	3	..	..	..	2	1	1	2	..	..	..	..	..	..	..	1	5	..	..	..	9
Mundare	6	..	4	..	3	..	..	..	..	..	..	..	..	..	..	1	3	2	1	..	7
Okotoks	4	1	..	..	5	..	..	..	..	..	..	..	..	..	..	1	3	1	..	..	7
Provost	2	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	1	2	..	..	3
Stavely	1	..	..	..	1	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	1
Stettler	3	..	..	..	2	..	..	2	1	4	..	..	..	..	..	1	1	2	..	..	4
Taber	10	..	3	14	3	..	..	..	..	..	..	..	..	..	2	3	7	6	2	..	20
Vulcan	1	..	..	..	1	..	2	..	..	..	..	..	..	..	..	1	1	1	..	..	2
R. M. Rosenheim	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1
R. M. Sterling	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2
R. M. Tomahawk	2	4	..	..	..	..	6	..	..	..	..	..	..	1	3	..	..	2	2	..	6
Total	183	97	4	30	115	21	15	2	20	24	15	5	5	2	25	49	49	129	25	1	280

TYPHOID FEVER.
(Outside Municipalities.)

POST OFFICE	SEX		MONTHS												AGES					Total			
	M.	F.	January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44		45-59	60-69	70 over
Clareholm	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	1
Cochrane	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Edmonton South	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Lethbridge	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	2
Macleod	2	..	1	..	2	..	..	1	..	..	..	..	..	..	..	..	1	..	3	..	..	..	4
Okotoks	11	..	..	..	..	..	..	9	2	..	..	..	..	..	..	..	2	9	..	..	..	..	11
Redcliff .....	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Rocky Mountain	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Stettler	1	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	..	1
St. Paul	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	1
Sturgeon	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Vegreville	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Wainwright .....	..	2	..	..	1	..	..	..	..	..	1	..	..	..	..	1	1	..	..	..	..	..	2
Total	23	5	3	1	4	..	..	2	10	4	1	1	1	1	1	1	3	5	16	1	..	1	28

DEPARTMENT OF AGRICULTURE

(Within Municipalities.)

POST OFFICE	SEX		MONTHS												AGES						Total		
	M.	F.	January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44	45-59		60-69	70-over
Calgary	62	59	17	15	9	13	19	12	4	3	7	6	10	6	3	22	60	25	12	121
Edmonton	12	10	5	2	5	3	..	1	2	..	3	..	1	..	1	5	8	8	22
Lethbridge	1	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	2
Medicine Hat	4	10	..	1	..	..	..	7	3	1	..	..	..	2	..	2	6	4	..	..	..	14
Barons	2	3	..	..	1	..	..	..	..	..	..	..	..	4	..	1	2	1	1	..	..	5
Camrose .....	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	1
Clareholm .....	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Ft. Saskatchewan	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Leduc	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	..	..	..	1
Okotoks .....	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Okotoks .....	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Oyen .....	..	2	..	..	..	..	..	..	2	..	..	..	..	..	..	..	2	..	..	1	..	2
Taber	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
R. M. Little Bow	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
S. M. Tomahawk	1	3	..	..	..	..	..	..	..	..	4	..	..	..	..	1	2	..	1	..	..	4
Total	86	91	23	15	16	17	20	21	11	4	16	6	11	14	3	32	82	38	21	1	177

DIPHTHERIA.
(Outside Municipalities.)

POST OFFICE	SEX		MONTHS												AGES					Total			
	M.	F.	January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44		45-59	60-69	70-over
Acadia	..	2	..	..	..	..	..	..	2	..	..	..	..	..	..	1	3	1	1	..	..	..	2
Camrose	3	2	..	..	..	..	5	..	..	..	..	..	..	..	..	1	8	1	1	..	..	..	3
Didshury	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	2
Edmonton South	..	2	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1
High River	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Innisfall	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Okotoks	23	..	..	..	..	..	1	6	..	..	1	..	..	..	..	1	..	5	18	..	..	..	25
Stettler	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1
Taber	1	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2
Vegreville	1	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1
Victoria	1	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Total	31	10	1	..	2	5	20	9	..	1	2	..	1	1	1	3	8	9	20	..	..	..	41

SMALL-POX.

(Within Municipalities.)

		January	February	March	April	May	June	July	August	September	October	November	December	Total
Calgary	2	..	..	2	..	..	..	..	..	..	..	..	..	2
Medicine Hat	1	..	..	1	..	..	..	..	..	..	..	..	..	1
Mundare .....	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Total	3	1	1	2	1	..	..	..	..	..	..	..	..	4

(Outside Municipalities.)

		January	February	March	April	May	June	July	August	September	October	November	December	Total
Beaver River	1	..	..	..	..	1	..	..	..	..	..	..	..	1
Lacombe	1	..	..	..	..	..	1	..	..	..	..	..	..	1
Medicine Hat	1	..	..	..	..	..	2	..	..	..	..	..	..	2
Total	2	..	..	..	..	1	3	..	..	..	..	..	..	4

DEPARTMENT OF AGRICULTURE

POST OFFICE	SEX	MONTHS												AGES					Total.			
		January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44		45-59	60-69	70 over
Calgary	M	11	7	7	7	1	1	8	10	4	6	32	17	20	10	21	54	27	12	..	124	
Edmonton	F	41	39	26	11	16	36	30	10	19	191	113	46	39	136	192	193	15	3	..	578	
Lethbridge	M	..	2	2	1	2	..	..	2	..	..	4	16	..	6	13	8	2	..	..	29
Medicine Hat	M	30	..	..	7	2	5	5	..	..	10	19	2	3	13	33	1	..	..	..	50
Beverly	F	..	..	..	..	..	..	..	..	3	5	8	4	..	8	10	2	..	..	..	20
Castairs	M	3	..	..	..	..	..	..	..	..	11	..	..	..	3	9	..	..	..	..	11
Cochrane	M	2	..	..	..	..	..	..	..	..	..	4	2	..	..	1	3	2	..	..	6
Coleman	F	3	..	..	..	..	..	..	..	6	..	..	..	..	1	5	..	..	..	..	6
Edson	F	12	19	..	..	..	..	..	..	..	..	..	..	..	1	11	1	..	..	..	19
Ft. Saskatchewan	M	1	..	..	..	..	..	..	..	..	..	..	21	..	..	2	2	..	..	..	3
High River	F	3	5	..	..	..	..	..	..	..	..	..	..	..	2	3	..	..	..	..	5
Innisfail	M	6	..	8	..	5	..	..	..	..	..	..	..	..	..	7	5	..	1	..	13
Raymond	F	2	..	..	..	..	..	..	..	..	..	3	..	..	..	3	..	..	..	..	3
Redcliff	M	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	1
Wainwright	F	5	..	1	4	3	..	..	..	..	..	..	..	..	..	7	1	..	..	..	8
R. M. Beddington	M	1	..	..	..	2	..	..	..	..	..	..	..	..	1	1	..	..	..	..	3
Total		424	453	57	67	36	32	31	50	45	16	34	249	168	92	52	198	354	240	29	1	877

CHICKEN-POX.
(Outside Municipalities.)

POST OFFICE	SEX		MONTHS												AGES						Total.		
	M.	F.	January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44	45-59		60-69	70-over
Camrose	5	4										9				1	6	2					9
Edmonton South	3	1		4												1	3						4
Leduc	6	2			12				1							3	9	1					13
Medicine Hat		1			1													1					1
Okotoks	2									2									2				
Ribstone		1											1				1						1
Rocky Mountain	5	2	7													1	5		1				1
Victoria		1											1				1						1
Wainwright	2	3		5												1	2	2					5
Total	23	20	7	9	13	1	1	2	1	2	9	9	2			7	27	6	3				43

DEPARTMENT OF AGRICULTURE

SEX

MONTHS

SEX

POST OFFICE

	M.	F.	January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44	45-64	65-79	70-over	Total
Calgary	371	323	11	27	76	208	218	86	23	22	13	1	2	7	52	104	309	195	30	4	...	...	694
Edmonton	591	510	16	83	210	356	273	127	29	4	...	3	...	...	90	376	542	62	31	...	...	...	1,101
Lethbridge	102	94	...	1	...	5	18	54	82	27	2	...	3	4	4	35	138	18	1	...	...	...	196
Medicine Hat	110	113	...	...	...	13	41	96	67	5	...	...	...	...	8	35	141	31	7	1	...	...	223
Beverly	27	15	...	...	1	9	20	12	...	...	...	...	...	...	...	15	17	10	...	...	...	...	42
Castor	24	20	28	16	...	...	...	...	...	...	...	...	...	...	1	13	21	7	...	...	...	...	44
Cayley	4	4	...	...	...	...	...	8	...	...	...	...	...	...	...	4	4	...	...	...	...	...	...
Clive	1	3	...	...	...	...	4	...	...	...	...	...	...	...	1	...	...	2	1	...	...	...	...
Coalhurst	1	4	...	...	...	...	...	...	1	4	...	...	...	...	...	3	...	...	...	...	...	...	...
Coleman	125	140	...	...	...	123	142	...	...	...	...	...	...	...	...	130	108	27	...	...	...	...	265
Diamond City	8	6	...	...	...	3	11	...	...	...	...	...	...	...	1	4	...	...	...	...	...	...	14
Drumheller	14	22	...	...	...	34	2	...	...	...	...	...	...	...	2	...	31	...	...	...	...	...	36
Edson	39	26	...	...	...	20	42	3	...	...	...	...	...	...	2	11	46	3	3	...	...	...	65
Erskine	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2
Fort Saskatchewan	14	23	...	...	...	7	30	2	...	...	...	...	...	...	...	10	22	7	...	...	...	...	39
Grassy Lake	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
High River	42	43	...	...	...	6	62	13	2	2	...	...	...	...	3	17	47	16	2	...	...	...	85
Innisfail	3	6	...	...	...	5	4	...	...	...	...	...	...	...	...	...	3	6	...	...	...	...	9
Killam	2	1	...	...	...	2	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	3
Macleod	37	28	...	...	...	...	...	...	...	1	...	1	26	37	4	6	47	6	2	...	...	...	65
Nanton	16	34	...	...	...	49	1	...	...	...	...	...	...	...	2	17	30	1	...	...	...	...	50
North Red Deer	3	3	...	...	...	...	...	...	...	6	...	...	...	...	...	2	3	...	1	...	...	...	6
Okotoks	24	11	...	...	...	...	...	...	...	...	...	...	...	...	...	6	23	...	1	4	1	...	35
Provost	4	8	...	...	...	...	12	...	...	...	...	...	...	...	...	7	...	2	1	...	...	...	12
Redcliff	2	4	...	...	...	...	3	...	...	...	...	...	1	2	1	2	2	1	...	...	...	...	6
Stony Plain	6	11	...	...	...	7	4	3	3	...	...	...	...	...	1	7	9	...	...	...	...	...	17

[illegible]

MEASLES
(Outside Municipalities.)

POST OFFICE

POST OFFICE		M	F	Jan	Feb	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	0-1	1-4	5-14	15-24	25-44	45-69	70-over	Total
Clearwater	1	1				1											1		1				1
Cochrane	2	1									1	1							1	2			3
Coronation	1				1														1				1
Didsbury	1	1						1	1														2
Edmonton South		2			2																		
Edson	4	1					5										2		1	2			3
Gleichen	1	1													2								3
High River	11	8			1	4		13	1								2		13	3	1		19
Hinmstail	1	1																					1
Lacombe	1	2				1		1	1								1		1				3
Lac Ste. Anne	1	1			1		1	1									1						2
Leduc	1	1			1		1																2
Lethbridge	4	7					4	7									2		5	4			11
Little Bow	1	2				1	2																3
Macleod	16	4					2	16				1				1	2	4	10	4			20
Medicine Hat	1					1																	1
Nanton	2	2					4												4				4
Okotoks	66							32	14	20									6	59	1		66
Pembina	19	14			32	1										2	5	7	12	6	1		33
Redcliff	1	3					2			2									4				4
Red Deer	1							1									1						1
Rocky Mountain	8	14			1	1	13	3	4							2	4	11	5				22
Sedgewick	2	3					5										1	2	2				5
Sturgeon	1					1													1				1
Stettler	2	1					1				2							3					3
Vegreville	6	3						5			2	2				1	2	6					9
Victoria	2							9															2
Wainwright	7	5			1	2	9										1	2	6	3			12
Warner	1	1																					2
Total	165	77		4	35	14	50	81	23	27	4			2	2	7	28	84	51	70	2		242

WHOOPIING COUGH.

(Within Municipalities)

POST OFFICE	SEX	MONTHS												AGES						Total		
		January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44	45-59		60-69	70 over
Calgary	139	53	92	56	31	27	7	1	1	2	1	1	...	16	28	96	92	41	1	...	...	271
Edmonton	67	20	8	6	6	...	1	3	11	21	10	39	3	6	57	45	22	1	...	...	...	131
Medicine Hat	14	...	...	...	4	4	4	6	15	...	2	...	...	2	17	15	1	...	...	...	...	35
Beverly	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Ft. Saskatchewan	2	...	...	...	...	...	...	...	3	...	...	...	...	...	1	1	1	...	...	...	...	3
Killam	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Macleod	1	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...	2
Raymond	24	...	...	...	...	...	...	...	...	...	...	47	...	...	21	25	1	...	...	...	...	47
Retlaw	10	...	...	...	...	...	...	...	20	2	...	...	...	...	7	14	1	...	...	...	...	22
Stony Plain	3	...	...	...	...	...	...	...	...	...	...	4	...	...	2	2	...	...	...	...	...	4
Vegreville	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1
R. M. McLean	14	...	...	...	...	...	...	...	...	7	8	4	4	3	8	9	2	1	...	...	...	23
R. M. Stirling	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1
Total	276	53	100	62	41	32	13	13	53	32	23	95	8	31	143	207	120	43	1	...	...	545

(Outside Municipalities)

Nanton	1	...	...	...	...	5	...	...	...	...	...	...	...	1	2	7	...	...	...	...	5
Pembina	5	...	...	...	9	...	...	...	...	...	...	...	...	...	2	7	...	...	...	...	9
Taber	4	...	...	...	...	...	...	...	...	1	1	...	2	...	2	1	1	...	...	...	4
Total	6	...	...	...	9	5	...	...	...	1	1	...	2	1	6	10	1	...	...	...	18

TUBERCULOSIS

(Within Municipalities)

SEX	MONTHS												AGES						Total	
	January	February	March	April	May	June	July	August	September	October	November	December	0 1	1 4	5 14	15-24	25-44	45-59		60 69	70 over
M.	1																			
	23	3	9	4	5	13	4	18	14	4	3	4				28	57	1		
Edmonton	19	1	3		9	2	1	4	1	3	3	5				15	21	1		
Calderbridge	3	1								2					1	5	1			
Camrose									1			1					2			
Fort Saskatchewan	1		1														1			
High River		1															1			
St. Paul																	1			
St. Paul	1					1														
3-110																				
Total	46	13	14	4	13	18	5	22	16	9	8	10		1	1	48	85	2		137

(Outside Municipalities.)

(Outside Municipalities.)

Camrose	2																			2
Hand Hills		1									1									2
Leduc		1					1													2
Ponoka	5							1												1
Red Deer	4									3										3
Stettler	1																			3
Sturgeon	1								1											2
Verdun	4																			2
Victoria	3																			4
Whitford	1			1	1															4
Total	18	19	8	5	2	4	1	5	2	4	1	3	1	1	5	12	16	4		37

DEPARTMENT OF AGRICULTURE

INFANTILE PARALYSIS
(Within Municipalities.)

POST OFFICE	SEX		MONTHS												AGES						Total		
	M.	F.	January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44	45-59		60-69	70-over
Calgary	2	..							2								2						2
Edmonton	8	5							2	3	5	3				8	4		1				13
R. M. Flagstaffe	1	..								1						1							1
Total	11	5							4	4	5	3				9	6		1				16
(Outside Municipalities.)																							
Edmonton South	1	..								1						1							1
Okotoks	1	..									1							1					1
Sedgewick	1	..							1								1						1
Total	3	..							1	1	1	1				1	1		1				3

OTHER DISEASES

(Within Municipalities.)

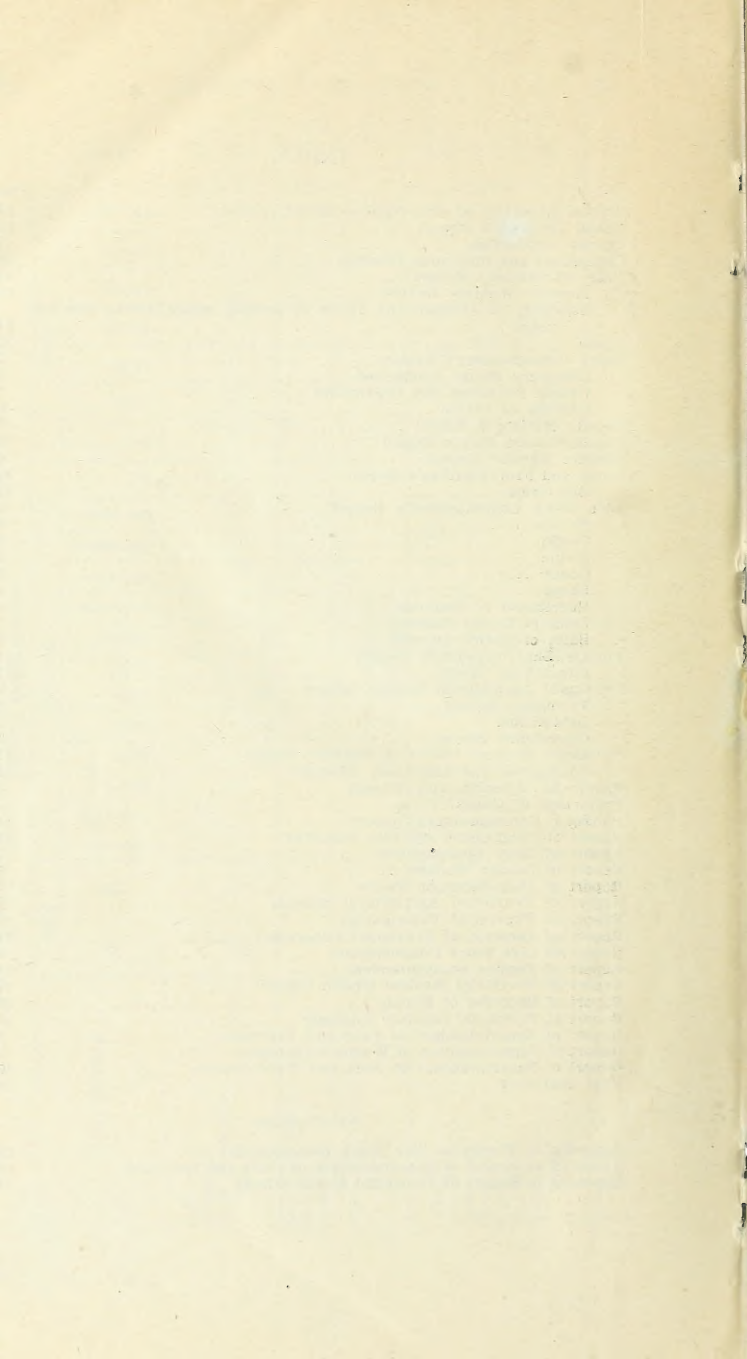
POST OFFICE	SEX		January	February	March	April	May	June	July	August	September	October	November	December	0-1	1-4	5-14	15-24	25-44	45-69	70-over	Total
	M.	F.																				
Calgary	16	14		3	4	3	6	1	2	2		1	3	5			6	17	7			30
Edmonton	31	13	5	8	6	7	5	2	1	3	1	3	2	1		2	12	22	8			44
Lethbridge	2	1		2							1				1	1	1		1			3
Carstairs .....	..	2					2									1	1					2
Edson	1	..			1											1		1				1
Nanton	1	..					1													1		1
Redcliff	1	..										1										1
Total	52	30	5	13	11	10	14	3	3	5	2	5	5	6	1	4	19	40	17	1		82
(Outside Municipalities.)																						
Lacombe	1	..									1					1						1
Total	1	..									1					1						1

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Alberta, Dept. of Agriculture
Annual Report - 11th. 1916.

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DATE.

NAME OF BORROWER.

Sept 13/46

in garden of the ship

